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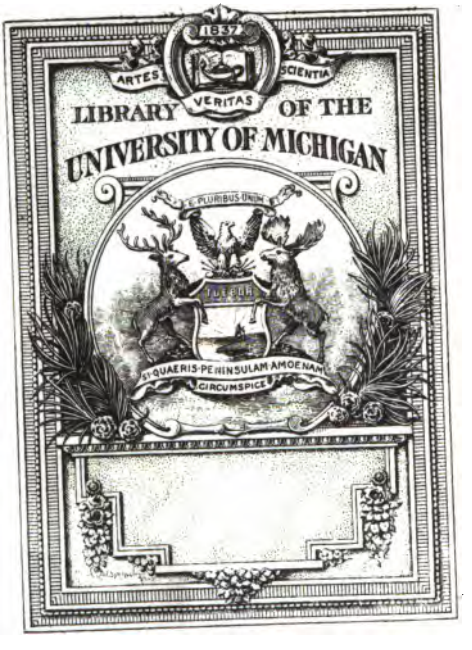
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TREATISE

ON

SPERMATORRHEA, IMPOTENCE, AND STERILITY

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BY

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PREFACE.

THE author has had an extended experience in the particular line of diseases herein treated, and this experience has been embodied in the following pages. Those who are acquainted with him may think that the treatment is confined largely to the electrical side of it. While he has tried to give a very comprehensive *résumé* of the electrical treatment, he has endeavored to give a very complete description of the hygienic management, which is the keynote of the successful treatment of a large proportion of such cases, as well as the importance of the medical, mechanical, and hydropathic treatments, all of which have been fully discussed, and every detail thoroughly described.

Of all the works the author has read treating on this subject,—which are many,—with only few exceptions the authors are surgeons, and have treated the subject from a surgical standpoint. The diseases in this work are treated from a neuro-

logical, or, to be more accurate, from the doctor's and not the surgeon's point of view; for the author believes that the diseases are essentially, with few exceptions, of a neurological type, and, therefore, come under the physician's more than the surgeon's care. This will account for some of the ideas expressed, which are contrary to the generally accepted opinions.

64 WEST FIFTY-FIRST STREET,
NEW YORK, *July*, 1896.

SPERMATORRHEA.

THE normal ejaculation of semen is the result of certain reflex and motor impulses, caused by friction of the glans penis—sexual intercourse being the only perfectly physiological manner of producing it—on the walls of the vagina. If from any cause there develops within the body abnormal conditions which cause a loss of the semen, either by ejaculation or by a continual leakage, there is present the disease known as spermatorrhea.

Classification: A classification, which has become time-honored, is to divide spermatorrhea into three classes, namely: Nocturnal emissions, or emissions during the sleeping hours; diurnal pollutions, or those which take place abnormally during the waking hours; and spermatorrhea proper, which is the unconscious flow of the semen from the urethra without erection or special sensations. Dr. S. W. Gross* has given the term spermatorrhagia to the latter stage.

This classification is certainly an excellent one, but in studying the course of this disease it will be

* "Functional Disorders of the Male Sexual Organs."

seen the first symptoms which make their appearance are nocturnal emissions; and as the disease advances, diurnal pollutions and spermatorrhea proper follow in the order given, tracing the development from one stage to another, all of which, more or less, intermingle. I shall, therefore, preserve this classification, but shall at the same time divide spermatorrhea into three stages—nocturnal emissions, or first stage; diurnal pollutions, or second stage; and spermatorrhea or spermatorrhagia, or third stage, and describe the disease, when not arrested, as progressive, rather than one having distinct divisions.

Nocturnal emissions, or first stage: That a man can have nocturnal emissions and yet be perfectly healthy is a well-known fact. One of the principal questions arising in a physician's mind when consulted for nocturnal emissions, is whether the condition is physiological or pathological. Undoubtedly many a man has gone through various courses of treatment and suffered mental torment, which has also weakened him physically, for nocturnal emissions that have been physiological. On the other hand, I believe much harm has been done by the assurance that emissions were physiological when such was not the case.

In looking back over the history of this disease, we find at one time every form of discharge from the urethra was considered of grave import, and was

treated accordingly; but, like all extremes, the pendulum swung in the opposite direction, and I believe too far. Of fifty-two cases suffering from spermatorrhea which have consulted me, forty-one were chronic cases. Of these forty-one cases thirty-six had consulted physicians in the earlier stages, and had been assured that the discharges were healthy and need not cause the slightest worriment. In fact, some physicians had even assured them it was an indication of excellent health and great sexual vigor. All of these thirty-six cases became chronic, some incurable, and those that did recover required a much longer time to reach a cure than would have been necessary had the condition been rightly diagnosed at first.

It is therefore most important to be able to judge when first consulted as to the real nature of these discharges.

"There are many cases," says Dr. Milton,* "in which it is difficult to say whether they call for any treatment or not; but as a broad rule it may be stated that they do so whenever the patient feels worse after them, and that in men who have reached the age of three and four-and-twenty, anything beyond one emission a month requires attention."

This assertion led Dr. Black† to exclaim: "If it

* "Gonorrhea and Spermatorrhea."

† "Functional Diseases of the Renal, Urinary, and Productive Organs."

be asserted on the one hand, as has been done by writers on the subject, that more than one involuntary emission in a week in continent persons constitutes spermatorrhea, then I assert most unhesitatingly that there is not one continent young man in fifty in Great Britain who is not suffering from spermatorrhea."

These two authors undoubtedly represent the two extremes.

"In a general way," says Dr. Gross,* "I would say that in single men who have led a continent life, and possess a sound nervous system, emissions at intervals of two weeks are indicative of excellent health."

I have quoted from these well-known authors so that the reader may attain an idea of the difference of opinion prevailing on this subject. Undoubtedly the truth lies somewhere between the extremes. In forming an opinion when a case is presented for examination, there are many things to be taken into consideration regarding the circumstances surrounding each one individually, but there are four points which hold in every case, and should always be considered:

First, the temperament; the constitution, general and sexual.

Second, the effect the emission has upon the nervous system.

* "Disorders of the Male Sexual Organs."

Third, the frequency; and

Fourth, the history of the case.

First: Temperament; constitution, general and sexual.—There are probably no two constitutions having the same vigor; neither is the general constitution indicative of the same vigor and strength of individual functions. We may have two apparently similar good general constitutions, and yet one have very strong eyesight and the other weak eyes. The same is true of the sexual organs. There is no part of the human organism that may vary more in vigor and endurance than these organs. Weak sexuality may be inherited, or it may be acquired. In two persons having apparently the same constitution, seminal emissions may have a very bad effect on one and not on the other. In one of a weak constitution, with a nervous temperament, nocturnal emissions should be considered grave enough to warrant interference even though the patient does have considerable vigor. The same is true if the patient should have a fairly good constitution, but be sexually weak, which is made manifest by undersized organs, or symptoms of impotence, or sexual neurasthenia; for in these cases, if the emissions are even far between at first, they are liable, if not stopped at once, to become more frequent and the disease progress to a chronic stage.

Second: The effect the emissions have upon the nerv-

ous system.—There is a class of cases occurring in young men who, being strong physically and sexually, may, from slight causes, have occasional emissions. If this is physiological, it is simply an effort on the part of nature to relieve the over-distended seminal ducts, which is the result of over-active testicles, and is local; the only effect it has on the nervous system is passive, consequently the patient feels just as well the next day—in fact, he is liable to feel better. But when the condition is primarily seated in a faulty or deranged nervous system, then the condition is not local, and generally bad effects follow. The next day the patient feels languid, and, if the emissions occur often, they completely prostrate him. This is always indicative of a pathological condition, and requires treatment.

Third: Frequency of the emission.—Authors, as a rule, give this as an important guide; but, as the reader must see, it would be very misleading when taken singly. It should always be taken in conjunction with the other conditions, and, to my mind, is the least important of any. Generally speaking, an emission once in two weeks, with all other conditions favorable, may not be considered pathological; but if they grow more frequent, even if other symptoms do not indicate a grave condition, they should be attended to. I do not believe that seminal emissions continue year after year, unless some exciting cause be continually kept up,

and the patient remain healthy, even though the emissions are far apart—say a month.

Fourth: The history of the case.—If the disease has come on a young man who has always led a straightforward life and is simply the result of sexual vigor, it is undoubtedly due to some exciting cause, such as given above, and will gradually pass away, and should not create alarm; but if it follows masturbation, sexual excesses, gonorrhea, where the deep urethra has been involved, or where there are strictures or gleet as a result, it is always best to treat the case and stop the emission, if possible.

Symptomatology, course, and duration.—It would be a difficult task to describe all the different conditions which spermatorrhea might produce; but we can give a general outline of the symptoms and course which every case is more or less liable to follow.

A large proportion of the cases of spermatorrhea which come under the physician's observation begin with nocturnal emissions following masturbation. The emissions may commence while the patient is carrying on this nefarious practice at full speed; but, as a rule, they make their appearance at the time he is trying to stop, or has suddenly stopped the practice. Sometimes the emissions do not appear until some months or a year after masturbation has been discontinued. It may also follow sexual excess, or when a man has been suddenly widowered.

As a rule, at first the emissions do not produce any bad effects on the patient. They are accompanied by a dream and pleasurable feelings, which are distinctly remembered the following morning. At first the patient awakes at the time of the emission; but, as the disease progresses, he sleeps through it, and still later the dream ceases to accompany the emission. As the disease advances there is a feeling, first, of lassitude in the morning, perhaps headache, with loss of appetite for breakfast. These symptoms increase in severity until there seems to be a general constitutional disturbance, becoming more or less constant, but aggravated at the time following the emissions, which have a tendency to grow more frequent. At this stage the patient will be able to carry on the ordinary pursuits of life, but he will be very nervous and restless, easily fatigued, both by physical and mental labor, perhaps more by the latter than by the former, and becomes melancholy about his condition.

CASE I.—A man, forty-two years of age, of a very neurasthenic temperament, to a degree hereditary, and which had been made worse by masturbation in youth, had had some seminal discharges before marriage, which was not till after his thirtieth year. During his early married life he indulged excessively in sexual intercourse. For the first few years of this period he had no nocturnal emissions,

but they finally returned, and continued to increase in frequency. Later on, it was found that sexual intercourse greatly aggravated the emissions, and it had to be discontinued altogether. This condition had continued for a number of years, he having emissions averaging once in two weeks, with profound constitutional disturbance following each, so much so that, if two or three emissions followed each other within a few nights, he was entirely incapacitated for business.

At this stage of the disease the local effects are made manifest; the first or irritable stage of impotence is generally present; the penis shrunken and hard; the lips of the meatus are everted and red; the urethra is sensitive, especially the prostatic portion; and, often, there is a frequent desire to urinate, owing to the extension of the urethral congestion back to the neck of the bladder.

Diurnal pollutions, or second stage.—The majority of cases never progress beyond the first stage, or nocturnal emissions. When, however, they do progress to the second stage, it is generally ushered in by an accident, of which I think the following case is a typical one:

CASE II.—A young man, æt. twenty-four, who was suffering from spermatorrhea, having diurnal pollutions, consulted me. He had masturbated from his eighth to his eighteenth year. As he discontinued the masturbation, nocturnal emissions came on.

This did not give him much uneasiness until a pamphlet fell into his hands from an advertising quack, which painted his condition in such a dismal light that he became alarmed. He sent for a number of bottles of the quack medicine, continuing its use for more than a year.

At this time it appears that the bad constitutional effects of the emissions were not marked. One day, in his twenty-second year, he was attending a picnic, where he played various games in which he was made to pay forfeits by kissing young ladies. This caused him to have an erection, and, fearing that it would be noticed by others, he started to climb a rope which was one side of a swing, hand over hand, with the aid of his legs clasping the rope, thus bringing it directly against the erect penis. To his surprise, before he reached the top, he felt quite a sensation, accompanied by an emission. He at once started on the return, twisting his legs around the rope in such a way that the friction was brought still firmer against the penis. Before reaching the bottom he had another emission, with but the faintest sensation. These emissions, together with the violent exertion he had made, produced such a profound prostration that he was unable to stand, and was obliged to lie under a tree for an hour before he was able to walk home.

A few days after the above occurrence he started to do an errand on horseback, when he had the

same experience. From this time he gradually grew worse, so that thinking of women, or the sight of a handsome woman, would cause an emission without scarcely any sensation. Once looking at circus posters portraying women riding horseback and performing on a trapeze in tights, caused an emission. This patient was anæmic and very weak, but not particularly melancholic.

From this condition it is a very easy transition to the third stage.

Spermatorrhagia, or third stage.—I believe these cases are rare. They exist more in the morbid fancy of melancholic masturbators than in fact. I have never seen a case, at least to my knowledge, where there was a continuous daily escape of semen. I have, however, seen cases where there was a periodical escape of semen, of which the following case is an illustration:

CASE III.—A young man, twenty-six years of age, a jeweler, owned a microscope, and was very apt in the use of it, and together we examined specimens of his urine for spermatozoa for months. He had masturbated from his ninth to his twentieth year, although the last four years of this time the habit was practiced but little. After discontinuing the habit, night emissions made their appearance at frequent intervals, as he remembered, about two or three times a week, but which did not produce any very marked effect on his general constitution.

One day, when thrown into the secluded company of a female friend of the family, some years older than himself, she made advances to him, when he had an erection and emission before he could unbutton his trousers. On three occasions after this he tried to have connection with this same woman. He would make appointments to meet her at a certain place, but would no sooner enter a room alone with her than he would have an emission. On her advice he told his father something of the condition he was in. His father, being a German by birth, conceived the idea of sending him to a doctor in the fatherland, an old school friend of his, and the boy was accordingly dispatched to Germany, where he remained for three years, all the time under treatment, with the result that the diurnal pollutions were relieved, and the nocturnal emissions reduced to one in from three to five weeks, and these had the effect of exhilarating rather than depressing him.

On two recent occasions he had undertaken to have sexual intercourse. Both times there had been an erection with premature emissions (irritable impotence), and each occasion was followed by bad consequences, as nocturnal emissions followed each other weekly for several weeks, with a most depressing effect on his constitution, and it was months before things resumed their normal course.

The genitals were undersized and the testicles

soft and doughy to the feel. We examined the filtered sediment of the morning's urine, and sometimes that of the whole amount passed for the twenty-four hours, as he had an excellent opportunity to collect it, his bedroom being in the rear of his jewelry store. The morning following an emission a few spermatozoa would appear on the slide, which had probably remained in the urethra to be washed out on first urinating in the morning. The next day none were to be found, nor would they again be seen, if nothing happened to precipitate them, until from the eighteenth to the twenty-third day, when they would make their appearance in the morning urine, and continue to do so until the next emission.

On three occasions, however, the natural course of events were interfered with: one of these was due to a rather familiar frolic with a cousin, a young lady of whom he was very fond. The next morning, the thirteenth following the emission, spermatozoa were found in the urine, but were absent on the following morning, and continued absent until the twenty-second day, when they again appeared, and continued to be present until the thirtieth day, the time of the next emission.

The second occurrence followed a trip from Albany to this city on a Hudson River night boat. The stateroom adjoining his was occupied by an amorous couple, and, the partition being very thin,

his passion was naturally aroused. Although he urinated before leaving the boat in the morning, the urine during the day contained spermatozoa, and this was the ninth day following an emission. Spermatozoa continued to be seen in the urine until the fourteenth day following the emission, reappeared on the eighteenth, and was followed by an emission on the twenty-first day.

The third interruption was due to an entirely different cause. He had suddenly come upon a business trouble which threatened to ruin him financially. The first day following this trouble the urine was not examined, owing to his occupation and distress of mind. The following day, at my urgent request, the regular examinations were resumed; this was the fifth day following an emission. Spermatozoa were found in abundance and continued to be found, although not in such quantities, until the nineteenth day, when he had an emission. The business trouble was settled and the catastrophe averted about the fourteenth day, but the loss of spermatozoa continued.

I have given considerable space to this case, as I consider it one of the most interesting I have ever witnessed or read of. It would seem, ordinarily, there was no involuntary discharge of spermatozoa, except when the vesicles and ducts were overdistended; but on the slightest irritation of the nervous system or congestion to the parts they were expelled.

In nearly all cases of spermatorrhea the penis is shrunken, the corpus cavernosa hard to the feel, and the integument more or less anæsthetic. This loss of sensation of the integument of the penis I have noticed to be particularly marked to the faradic current. Often in the first stage the urethra may be found to be sensitive along its whole length, the prostatic portion particularly so. This sensitiveness may increase with the advancement of the disease, until it becomes so great that the discharge of semen or urine produces a burning sensation, as in the first stage of gonorrhea, only not so marked. The scrotum is elongated and testicles soft and sometimes very sensitive and irritable. The semen is thin and more opaque than normal. The spermatozoa is generally less in quantity, but not markedly so. As the disease advances the spermatozoa change in quality. They are smaller than normal, exhibit less vigor in the microscopic field, and some may be found motionless in perfectly fresh specimens. In those cases where the inflammation of the seminal vesicles and ducts is great (spermatic cystitis), the tails of the spermatozoa are shorter and the heads larger.

As will be seen further on, I believe the nervous system is in a deranged state before spermatorrhea makes its appearance. This abnormal condition of the nervous system, as a rule, increases as the disease progresses. There is generally some nervous

irritability of the genitals in the early stage; the penis may become erect at various times through the day irrespective of the desires of the individual. These erections are seldom complete, quickly subsiding, and, in a later stage, erections may be impossible. One form of impotence, usually the atonic, is present. Perineal spasms are liable to be more or less marked. In some cases for a long time the local symptoms are all that are noticeable; in others, where the general constitution has not been so strongly formed, there may be but few local symptoms, but the general nervous system suffers greatly. This begins first with a feeling of malaise and perhaps headache on the morning following an emission, but it quickly disappears, to return again, slightly increased in severity, after the next emission. The severity of the symptoms gradually increases until the patient is more or less incapacitated for business. At first there may be a tired feeling in the small of the back on standing, and in some there is a general muscular weakness and fatigue, with palpitation of the heart on slight exertion. Along with this the patient gets restless, cannot sit still, is constantly moving, although the movements induce great fatigue, which will cause him to be quiet, but only for a moment, when the restlessness will again appear. At this time the appetite is poor, digestion weak, and bowels constipated. The mental condition is quite character-

istic. At first the patient feels fatigued from mental exertion which he had been able to perform previously without fatigue. It then becomes a great effort to concentrate his mind on any subject, and this is most marked in attempting to begin the work. After he has begun some mental occupation he finds less trouble in continuing it until exhaustion forces him to stop, and in cases that have been completely cured, I have noticed this peculiar mental condition to be more or less marked for a long time after. In well-marked cases the impairment of the mental faculties for intricate work is generally marked. There are exceptional cases, however, when men suffering from this disease have had the greatest power of concentration of thought. The power of resistance to any objections is less, he shuns society, grows self-morbid, and imagines everyone knows what is the matter with him. I have never witnessed the terrible depths of despair some authors describe, but do not doubt their existence. If there is a natural tendency to any chronic disease of the nervous system, spermatorrhea hastens its development. I have no doubt that cases of insanity, which have been described as produced by it, have had a natural tendency in that direction and spermatorrhea has acted as an exciting cause. The same is true of locomotor ataxia.

Pathology.—After a careful perusal of a large

amount of literature on the subject, I am of the opinion that there is no other branch of medicine of which there is so little actually known regarding the pathology as in diseases of the male sexual organs. The physiology of the ejaculation of semen is scarcely touched upon in the leading works on the subject. It is, therefore, impossible to understand the pathology before we do the physiology. *Post-mortem* examinations have revealed but little, if any, actual knowledge concerning the pathology of spermatorrhea. There seems to have been, in times past, a prevailing idea that the cause was local, lying somewhere within the organs themselves, where it has been looked for, and various writers have claimed that it was due to deep urethral inflammation, stricture, tight foreskin, etc. One of the principal reasons for this is undoubtedly the fact that spermatorrhea, as well as all other forms of disease of the male sexual organs, has been relegated to the surgeon. So complex are the causes and nature of these diseases they cannot be said to come exclusively under any of the great classifications of the specialties of medicine; but, if they are to be brought under any one, I believe the neurologist would be the one best calculated to cope with them; for the pathology is essentially neurotic, and the surgical treatment is far less important than the hygienic, medical, and electrical, and these are more in the line of the neurologist.

That there is generally a sensitiveness of the deep urethra in these cases no one who has examined many of them can deny; but the very great degree of sensitiveness, as described by Lallemann, exists in but a very small number. In a large per cent. the degree of sensitiveness is not great, and I have seen two cases of well-marked spermatorrhea in which there was no sensitiveness of any part of the urethra whatever. On the other hand, anyone who has examined a large number of urethras will certainly affirm that there are many cases where the deep urethra is excessively sensitive without the presence of spermatorrhea. That a deep urethral inflammation may leave behind a state of congestion, or the presence of stricture which is producing continual irritation will do the same, there is probably no doubt; but, according to my experience, after having examined and treated for various conditions upward of four hundred urethras, a neurotic temperament aggravated by some exciting cause, as the nervous system reduced and deranged by some physical or mental strain, plays a far more important part in producing deep urethral sensitiveness, as demonstrated by the passage of a sound, than does either post gonorrhea or stricture.

The following case will demonstrate, more clearly than I can otherwise do, how the nervous system acts in this respect:

CASE IV.—A young man, æt. twenty-five, single,

and an author by profession. When I first saw him he could well be termed from his appearance a "walking cadaver." He was extremely anæmic, and suffered from neurasthenia, which continued after the anæmia improved. He could stand no physical exertion without extreme fatigue. He had masturbated only a very few times in his seventeenth year; had had only three nocturnal emissions as he remembered, and had indulged in sexual intercourse only four or five times. He had but little desire for it, and was left prostrated after the indulgence; had never had gonorrhea, but suffered from disagreeable sensations in the rectum and had slight perineal spasms which, in his neurotic state, made him very nervous. Examination of the rectum revealed no abnormal condition, except a nervous sensitiveness; but examination of the urethra was otherwise. The whole urethra was sensitive, but the prostatic portion was so very much so that although the sound was at once withdrawn, he fainted. After treating him for some time, improving the blood, building up his system in general, and getting him into a much better physical state, I attempted to pass the sound again, with better success. This was repeated at intervals of once a week at first, and gradually increased in frequency as the sensitiveness grew less, and this continued until he was called upon to write an article which caused him much anxiety. As he progressed from day to

day with the article, he became more and more excited until he could not sleep; if he did fall asleep his characters would appear before him and he would soon awaken. His nervous system was in a frightfully excited state, and in the same proportion the sensitiveness of the urethra increased, and, just before the article was finished, I was obliged to discontinue passing the sound. After the completion of the article, I resumed the passing of the sound, and the sensitiveness had almost disappeared when he was forced, in self-defense, into a controversy through the press. At once the sensitiveness began to return, and it again subsided as the nervous excitement passed away.

Of the fifty-two cases of spermatorrhea I have seen, only five had had gonorrhea, and the same number had stricture. As these are usually cited as the chief causes of deep urethral congestion, it would not seem that they play a very important part in the production of spermatorrhea, particularly when we take into consideration the thousands of men who have suffered from gonorrhea and stricture who have never had spermatorrhea. To be sure, masturbation and sexual excesses have a tendency to produce deep urethral congestion, and these are also the chief causes of spermatorrhea; but it should be remembered that both masturbation and sexual excesses have a more profound effect upon the nervous system; at least, when carried to excess, the nervous

system suffers more than do the sexual organs, if the symptomatology be taken as a guide.

It should also be remembered that spermatorrhea does not occur until masturbation has been carried on for some time, much longer than is necessary to produce irritation or congestion of the deep urethra, as evidenced by the symptoms or examination of the parts.

I believe, with Ultzmann,* that, when abnormal emissions take place they are due to a motor neurosis of the sexual system, and that masturbation, when acting as a cause of spermatorrhea, must be carried to such an extent as to produce this motor neurosis. If I were asked just where the seat of this neurosis is, I should be obliged to answer, "I do not know." Undoubtedly the principal nerve centers controlling the sexual organs are located in the lumbar cord, but we know that the mental faculties have a very great influence on the sexual organs. Case II. illustrates that. Reading obscene literature or looking at lascivious pictures produced erections and emissions, and how often have we seen that excessive sexual desires are the result of the person allowing his thoughts to continually dwell upon sexual intercourse, and, also, how a man can, by will power, prolong the sexual act, as in the Oneida Community, to an almost indefinite period.

* "The Neuroses of the Male Genito-Urinary Tract."

The sympathetic plexus of the pelvis undoubtedly plays an important part in this connection. We know these nerves are plentifully supplied to the sexual organs, and, judging from analogy, it is but fair to suppose that they control, to a greater or less degree, the circulation; but what other function they have, it is hard to say. We also know that, as the disease progresses, a change takes place in the nutrition of the sexual organs, as evidenced by the change in the anatomical and physiological properties of the semen.

I shall divide the pathology of spermatorrhea into two stages: that of irritability or spasm, and that of paralysis. It will, however, be seen that one merges into the other almost imperceptibly.

The irritable or spasmodic stage of spermatorrhea begins with the first nocturnal emission. It should be borne in mind that the dream which accompanies the emission is not the cause of the emission, but is the effect of the irritable state of the nervous system, just as is the emission; both stand in relation as symptoms produced by the pathological condition, and not as cause and effect. If the dream was the cause of the emission in the early stage, what would be the cause as the disease advances and there is no dream? The dream, however, aids in producing the emission, as it gives the assistance of the mind, by producing conditions in the patient which are conducive to an emission. At this time

the irritability has not reached a stage capable of producing an emission without the aid of the dream; but, as the disease advances, and the pathology becomes deeper seated, the emissions are produced without the assistance of it. A step further in the pathology, and the emissions are produced even with the will power exerting its influence in the opposite direction, as in diurnal pollutions. Here it leaves the stage of irritability or spasm, and passes into the stage of paralysis, and, when the paralysis becomes complete, the semen is no longer forced out in jets accompanied by an orgasm, but passes off imperceptibly, more or less continual, and becomes a true spermatorrhea.

One of the most perplexing questions in the pathology of spermatorrhea is, What is the cause of the general debility which is so often pronounced after an emission? Nearly all agree that the loss of semen has but little to do with the prostration following. Most authors claim that it is the effect of the orgasm upon the nervous system, and is only an exaggeration of the slight lassitude following a normal coitus. Dr. Milton * claims that an emission without sensation weakens the patient much less than one with sensation. If a man suffering from spermatorrhea has sexual intercourse, according to his statement, which is all we have to go by, the prostration following, while it may be marked, as in some

* "Gonorrhea and Spermatorrhea."

cases, is not so great as that following pollutions, yet the orgasm is greater, and, if the prostration is due to this, would it not naturally seem that it would be worse? In the case of coitus the orgasm is produced by the natural stimulus given to the nerve centers, through reflex action, by peripheral irritation; consequently the nerve centers act in a natural manner, only performing a function for which nature has provided; but, in their weakened state, it is a task they are unequal to without producing a strain upon the already impaired nervous system. In the case of the pollutions the nerve centers have no peripheral irritation to stimulate them to action, but are irritated by some source within the nervous system itself; consequently, there is a double strain upon the deranged nervous system.

We may have, therefore, three causes of the prostration and other bad effects: First, the loss of such a highly vitalized fluid as the semen, which undoubtedly has some effect, although it may be very small in comparison with the other two; second, the effect of the explosion, or orgasm, upon the nervous system; and, third, the irritation within the nervous system which produces the orgasm.

Ætiology.—Masturbation is the most frequent cause of spermatorrhea. It is a question whether there ever develops a case which does not have, as an initial cause, self abuse. It may be that sperma-

torrhea does not immediately follow masturbation, but it so weakens the organs and the nervous system that excesses and abnormal practices later in life, although not capable of producing the disease in one who has never masturbated, is sufficient in their case. I believe it should be considered as the initial, and all others as the exciting causes.

Of the fifty-two cases I have seen, with thirty-seven the spermatorrhea came on and continued without cessation while the patient was trying to stop the habit of masturbation, or immediately following its discontinuance. With nine of the remainder the patients had masturbated, had suffered from nocturnal emissions previous to marriage, which had ceased when regular marital intercourse was established, but had returned in from three to eight years after. With the remaining six, all had been masturbators, had discontinued the habit, had suffered from a few night emissions, which were not frequent, nor followed by bad results, and which had ceased. Their recurrence had followed excessive venery or abnormal practices.

Of the second class, the nine which had emissions before marrying, but which ceased when marital intercourse was established, I am certain five or six of them had spermatorrhea before marriage, and they simply substituted another form of emission for the abnormal one; but the disease was still present and continued to increase pathologically

until the substitution failed to conceal its real nature.

The other three or four cases, I believe, did not have spermatorrhea at the time of marriage, but their sexuality was weak and unable to bear the excessive venery, or which was excessive for them, and, consequently, spermatorrhea developed.

The third class were unmarried, but had been masturbators and had suffered from emissions which were evidently physiological, as they had ceased, but they afterward had spermatorrhea, at which time I saw them. These cases were also weak sexually, and the excesses and unnatural practices they indulged in later in life produced the spermatorrhea. In two cases these conditions were aided by a deep gonorrheal inflammation that continued for months and seemed to be an exciting cause.

Undoubtedly hemorrhoids or other rectal diseases may act as an exciting cause, also a tight foreskin; but the latter undoubtedly exercises its greatest influence on the production of spermatorrhea by its irritation in the young, causing erections and desires, and the consequent effect it has in producing and maintaining the habit of masturbation. A chronic subacute inflammation of the seminal vesicles (spermato-cystitis), may act as an exciting cause, and examination of these bodies should always be made. In fact, anything which has power to produce irritation of the genital tract

may act as an exciting cause, or maintain the disease after it has been established, but it should be remembered that all these are exciting causes only, and that there must be a deranged nervous system primarily.

Diagnosis.—There are two points to be considered in making a diagnosis of spermatorrhea: First, when the pollutions make their appearance, are they pathological, or are they physiological? And, second, when there are abnormal discharges from the urethra without an orgasm, what is the nature of the discharge? Does it contain semen or not?

The diagnostic points of the first have been given on pages 4 to 7. With the second, we must first take the history and condition of the patient into account, and, second, the microscopical test.

If a patient has a discharge of a little mucus after each stool, or with the urine, or a little mucus is brought away with the bulb of the exploring sound, one should first ascertain if he has ever had gonorrhea, which may have left an inflamed or ulcerated patch. The exploring sound will also locate a sensitive spot, if this is the nature of the condition, and, if it is in front of the prostatic portion, the evidence is very strongly against spermatorrhea; but if the prostatic portion is sensitive, further tests should be made.

If a case is not one of spermatorrhea, the patient will probably be in good health, and, although he

may have gloomy forebodings and imaginations, they should not be allowed to mislead in making a diagnosis. But if the case represents the picture previously given as characteristic of spermatorrhea, and if the pollutions have greatly affected the health of the patient, with partial or complete impotence, then you undoubtedly have a case of spermatorrhea. If by placing the discharge under the microscope, or allowing the urine, in case the suspected fluid passes away with it, to settle, and then filtering and examining the sediment, spermatozoa are found, it is a case of spermatorrhea. The absence of spermatozoa does not positively prove that it is not a case of spermatorrhea.

There may be temporary absence of spermatozoa, as is the case in over-indulgence; but, if semen is present at all, spermatic crystals will form in a few hours unless there is a lack of spermatozoa, or if the spermatozoa are dead, which is usually the case, owing to the acidity of the urine.*

Prognosis.—Authors differ greatly regarding the prognosis of spermatorrhea. Later writers, however, are more favorable in their prognosis.

When spermatorrhea follows sexual excess in middle age, the prognosis is more favorable than when it follows masturbation in youth. The reason for this is, the physiological activities of the sexual

*For fuller information concerning spermatic crystals consult the diagnosis of azoospermatism.

organs are on the decline in one, and on the increase in the other. Also, one is due to the over-exercise of certain functions of a matured body in a natural manner, while the other is due to an abuse of an immature body in an unnatural manner. When, however, a person has suffered from spermatorrhea in his youth, the result of masturbation, which has been stopped, and it has returned after sexual excess, the prognosis is more unfavorable.

When there is some reflex irritation of the nerve centers, and it is of a nature that can be removed, such as a tight foreskin, stricture, sensitive urethra, hemorrhoids, etc., the prognosis is more favorable. When excessive sensitiveness and irritation of the deep urethra is the exciting cause, the prognosis is more favorable if the urethral sensitiveness is due to a gonorrheal inflammation than when it is the result of masturbation; for in one case there is a simple local inflammation, while the other is the result of a disordered state of the nervous system. When spermatorrhea is present without any local reflex causes, or continues to exist after such causes have been removed, the outlook is always bad.

In recent cases of nocturnal emissions, when the general condition is good and with a fairly good nervous system, the prognosis is favorable; but when the patient has inherited a neurotic temperament, from abuse of any kind, either sexual excess

or an intemperate life has made it still worse, the prognosis is not so favorable.

When the disease has passed to the stage of diurnal pollutions, the prognosis is less favorable than in the first stage, but should not be considered incurable if the general physical condition is fair and friction of some kind is necessary to produce pollutions. But if the physical and nervous condition is greatly reduced and fails to respond to active tonic treatment, and if the pollutions are caused without friction, the prognosis is very bad.

With the third stage, or spermatorrhea proper, the prognosis is always grave, but may be modified by other conditions. A man seldom dies of exhaustion from spermatorrhea alone.

Treatment.—The treatment of spermatorrhea should be considered broadly. There are so many points to be taken into consideration that the treatment will be better understood by dividing it into some natural divisions.

Hygiene and general management.—This is undoubtedly the most important branch of the treatment, for, no matter how carefully and thoroughly medicines are prescribed and mechanical treatment carried out, it will be of no avail if the patient's hygiene is bad. The diet should be full, plain, and nourishing, for these cases, if of long standing, are more or less neurasthenic, and the diet should be such as is required for that condition. The evening

meal, however, should be very light and plain; no pastries or anything else should be eaten that will produce the slightest irritation of the intestinal tract.

In the early stage of the disease, when there is an hyperæsthesia of the whole sexual apparatus, as a *sensitive* urethra, irritability of the seminal vesicles, and muscular spasm of the ejaculatory ducts, the treatment should be directed to overcome this irritable state, and thereby relieve all sources of peripheral irritation.

Hot sitz baths are of great importance. The patient should be directed to take one every evening *on retiring*, at a temperature of 105°, if it can be borne. The patient should be wiped by mopping the water from the skin, and no friction be used on the genitals. When there is a great amount of muscular spasm of the perineum, the patient should be seated so that a large sponge, placed in a low basin or earthen dish of hot water, presses on the perineum.

If this does not prove successful, though it generally does, an application, such as a hot poultice or a hot water bottle wrapped in a flannel, made to the under surface of the penis, will be found to be very grateful. This I generally have the patient do every night after he retires. It will at once quiet the irritable condition, allowing the patient to go to sleep, and I believe materially lessens the pros-

pects of an emission. After the irritability and congestion has passed away, there remains an atonic condition which will be materially improved by the application of cold water to the genitals. If the bathtub is supplied with a cold water spray, that is the best form of applying it; but, if not, the patient should supply himself with a very large sponge and begin first by thoroughly bathing the genitals, the perineum, groins, and hips; then bring the sponge, well-soaked, up on the abdomen, and allow a brisk stream of water to flow over the genitals, repeating it several times. This far surpasses in effect the simple throwing of cold water on the genitals with the hand.

The patient should be kept in as cheerful society as possible, and all other means should be resorted to which will keep his thoughts from his condition. This may be impossible at first, if he is in a despondent condition; but the physician should not despair, for, with an improvement in the general tone and vigor of the physical condition, the mental stamina will also improve. All neurotic excitement is to be avoided, and the patient should so cultivate his thoughts that he can control his sexual desires. He should avoid the society of women who might excite these desires, and at the same time cultivate pure thoughts. The best way to accomplish this is to have the patient cultivate some hobby, such as botany, astronomy, music, stamp collecting, or some

mechanical occupation,—anything which he takes the most readily to,—and thereby absorb his mind and leave no time to dwell on his own condition. In other words, it is what a great divine has defined as, "The expulsive force of a new affection."

The nature of the case is such that the patient requires plenty of rest and sleep, but he also requires exercise, which should be well regulated. If the man is employed in an occupation requiring exertion, either physical or mental, which is beyond his strength, he should be made to curtail his labors. If he leads a sedentary life, physical exercise should be taken. Walking is good for exercise, but should not be indulged in to such a degree as to fatigue the individual. Gymnastic exercises are excellent, but the same precaution should be observed. Horseback riding is generally condemned, as it is supposed to irritate the deep urethra. For the same reason bicycle riding has been condemned. I am of the opinion that this advice is more the result of theoretical considerations than from actual experience. I have had but little opportunity of observing the effects of horseback riding, except in one case of diurnal pollutions (Case II.), and this was bareback riding. I have, however, observed some cases where bicycle riding was resorted to in spermatorrhea, and am satisfied that it can be indulged in, not only with impunity, but with benefit to the patient. I have seen cases

suffering from irritation of the neck of the bladder, perineum, and rectum, when of nervous origin, greatly benefited by bicycle riding.

The precautions are three in number: first, never ride fast or long enough to get fatigued; second, always sit erect, as leaning forward brings the weight on the perineum; third, be careful in selecting the saddle.

The long saddle, in which the rider is seated on a strip of leather hanging at each end, is not a good one, as it is bound, by the principle on which it is constructed, to bring more or less of the weight on the perineum. A saddle should be chosen which supports the body on the tuber ischii entirely. If these protuberances should be sensitive, which is liable to be the case, a pneumatic saddle will be most satisfactory. One should be selected that has the center stitched for an inch or more in width, so, when air is forced into it, the sides fill, leaving a depressed center. The pitch of the saddle should be inclined backward, so that the weight of the body has a tendency to throw one back on the broad part of the saddle.

During sleep the patient should lie on his side with a light covering. It is claimed by some that if the genitals can be kept exposed to a sufficiently low temperature, emissions will be prevented. Wrapping up all the rest of the body in flannels and leaving the genitals exposed is also recommended. It is, how-

ever, hardly necessary to do this; but the patient should sleep under the lightest thing that he can make himself comfortable with.

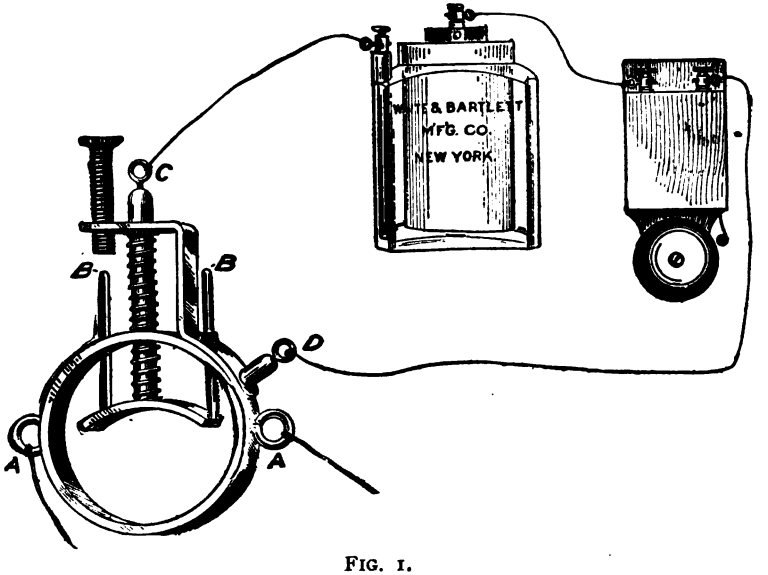

FIG. 1.

In a dorsal position a distended bladder presses upon the returning blood vessels, causing congestion of the penis and prostate. If the patient is liable to unconsciously turn on his back, a large towel may be tied around his waist, allowing the knot to come upon the back. In warm weather a large piece of

cork may be fastened to his back by means of a couple of tapes tied in front. As a full bladder tends to produce erections by obstructing the return circulation, it is important that the bladder should not be allowed to become over-distended. This may be prevented by the use of an alarm clock.

In recent cases it will be found that usually the emission takes place in the early morning hours—after three o'clock. If an alarm clock is set so as to

FIG. 2.

awaken the sleeper before that time, allowing him to empty his bladder, he may escape. After the case has advanced, emissions are liable to come any time, even after the bladder has been emptied, or soon after the patient has fallen asleep. For such a condition the spermatorrhea ring, or an electric ring, shown in Fig. 1, will better answer the purpose. The spermatorrhea ring shown in Fig. 2 is made of a band of some flexible metal which is capable of being adjusted to the size required. From the border of this ring project sharp teeth, which prick the integument of the

penis when it is enlarged by an erection. This ring, however, is very unsatisfactory, for, after it has been worn a few weeks, it fails to awaken the patient, and emissions continue to occur. The electric ring is far more useful. The penis is drawn through the ring so that it rests on the pubes, in which position it is fastened by tapes around the body. The ring is padded inside with rubber and felt so as to insulate the penis; a neglect of this may cause electrolysis of the skin. The connection of the circuit is made through the screw seen at the top of the ring; this can be set for any sized penis or for any stage of erection, thus being able to detect the first swelling before the stage of erection is reached. This screw arrangement also obviates the danger of strangulation of the penis, as a few turns of it will open up the throat of the instrument, allowing free circulation.

The patient goes to bed; the instrument is placed in position and the screw set to the size required. He falls asleep; the penis enlarges until it presses the movable part upward to the set-screw which connects the circuit of the battery; the electric bell in the circuit is made to ring, awakening the patient; the erection subsides; he may empty the bladder and fall asleep and be awakened again, and so on.

One precaution should always be taken: Cut the hair over the pubes, as it may prevent the contact

between the screw and the movable slide by coming between them, and thus prevent the closing of the circuit.

The ring given in the illustration is, I believe, a very perfect one, and the result of several experiments made by myself; the idea, however, so far as I know, originated with Dr. S. F. Wilcox ten years ago, who was annoyed, after performing an operation for hypospadias, by erections taking place and tearing out the stitches. This occurred twice, and even the watchfulness of a nurse placed by the bedside failed to prevent it. The third time he placed the ring he had invented, which involves the same principle as the one above, on the penis, and it worked to his entire satisfaction. Several have used these rings since, but I have been unable to find anyone who preceded Dr. Wilcox. I have used this ring in several cases with great benefit.

When the patient is awakened many times a night by the ringing of the bell, he loses more or less sleep. It is essential that this should be made up, for the success of the treatment depends largely on our ability to build up the general system. If he cannot take extra sleep in the day time, he should go to bed early and lie as late as he can.

The physical condition of advanced cases depends largely upon the frequency of the emissions, and, no matter how they may be prevented, the patient feels the benefit; and, by the use of this instru-

ment, weekly or semi-weekly emissions may be prolonged to fortnightly or monthly.

If the habit of masturbation is still carried on, it should be discontinued at once. This will not, as a rule, be difficult to accomplish, as spermatorrhea does not develop until the patient has arrived at an age when he is amenable to reason. He is, also, generally frightened regarding his condition, and will readily follow any advice the physician has to give him, particularly when he learns the habit is the cause of the trouble and is liable to make him much worse if he does not discontinue it. A good, earnest talk will have great weight with patients of of this kind.

I have never seen any good effect come from sexual intercourse in a case of active spermatorrhea. As has been before stated, when the emissions are physiological and due to a plethora of the seminal vesicles, marriage and legitimate intercourse is very beneficial. Illicit intercourse is never a benefit to anyone. Every physician should use all his intelligence to dispossess the mind of the idea, so prevalent among young men, that they must have sexual intercourse in order to be healthy. When a young man is about to be married and is suffering from seminal emissions, the marriage should be postponed until the emissions have been cured or proved to be physiological.

If masturbation or sexual excess be suddenly

stopped in these conditions, the seminal emissions are liable to be more frequent; but the patient should be made to understand that this increase of frequency is only temporary. When a man is suffering from spermatorrhea, and yet in the early stages, and still is strong, regular, legitimate intercourse will, I admit, generally stop the emissions for a time; but they will again return, and the disease is harder to cure than in the first place, for it is further advanced. The sexual desires aroused by sleeping with a wife makes total abstinence from intercourse so necessary in this stage of the disease, less liable to be strictly carried out; and the chagrin which the husband feels at not being able to perform the duties of his office, has anything but a beneficial effect on his mental condition. Later in the disease the bad effects of sexual intercourse are easily manifest. After he is cured he should be made to understand that he is sexually weak, and that over-indulgence on his part will cause a return of the disease.

General massage is one of the most useful adjuncts to the treatment of this disease, particularly when the patient is debilitated and his nervous system on the verge of collapse.

Surgical and Electrical Treatment.—The prepuce should be examined, and, if found to be malformed, circumcision should be resorted to. If there seems to be a tendency to the collection of

sebaceous matter over the glans and behind the corona, the patient should be directed to be particular and keep it cleaned. If there is a varicocele of one or both sides, or if the scrotum is relaxed, a suspensory bandage of the army and navy type should be prescribed and operative interference postponed, unless it is in the very beginning of nocturnal emissions and the patient is strong, when an operation may be performed.

If there are hemorrhoids, they should be treated as the physician may deem best. If circumstances are favorable, the American operation may be performed, as the wound will be outside, and, consequently, no internal irritation can be produced. If no operative procedure is resorted to, treatment of some kind may be given to allay the irritation. I have seen one case where the irritation produced by the ligature of an internal hemorrhoid aggravated the emissions greatly. Fissures of the anus should be treated by dilatation or other methods, as the physician may deem best. Spasm of the sphincter is sometimes a very annoying symptom and produces great irritation; the cause of it should be sought and the condition remedied. Spermatocystitis, if present, should receive the proper treatment.

The next thing in order is to examine the urethra. If the meatus is congenitally contracted, which has been true in four of the cases I have

examined, it should be enlarged. The urethra should then be carefully examined for stricture, and if one is found, treated by the method most approved of by the operator. I generally treat these cases by electricity, but other methods, such as division or dilatation, may be resorted to, if the physician is better acquainted with that treatment.

Next, ulcerated patches, if any, should be treated, and the deep urethral sensitiveness relieved. I generally treat these with the conical steel sound combined with galvanism. If the urethra is excessively sensitive, the sound should at once be withdrawn, not allowing it to remain a second; but after the sensitiveness has disappeared to such a degree as to allow the sound to remain a minute or two, I always attach the galvanic current to it. A flexible hand electrode is placed upon some convenient part of the body, to which the positive pole is attached, and this serves as the inactive electrode. A steel sound, as large as the urethra will take without producing undue dilatation, is introduced, the negative pole is attached, and the current gradually raised to about two or three milliampères, allowed to pass for one or two minutes, and then as gradually reduced. The ordinary steel sound will answer the purpose, as there is no need of having any part of it insulated.

The theoretical electro-therapeutist may object to this idea, claiming that, as the positive pole, or

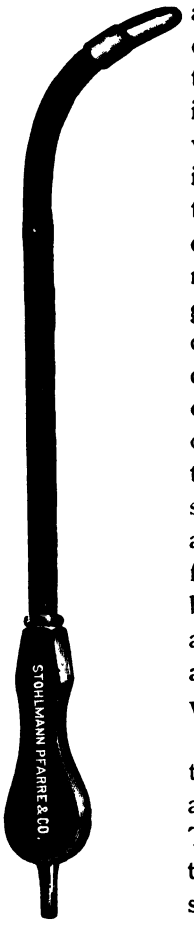

FIG. 3.

anode, produces anelectrotonus, or a decrease of irritability, it is the one that should be used in the urethra, instead of the negative, or cathode, which produces catelectrotonus, or increased irritability. After trying the two poles a number of times, I can affirm that the cathode is far more efficient in relieving a congested, irritable condition of the deep urethra than the anode. The current is weak, and the electrotonic effect is correspondingly small, and does not play an important part, but the electrolytic effect does. The slight alkalinity which is produced around the sound has a very beneficial effect on the congested, irritable state of the urethra, while the acid and chlorine set free by the anode is more irritating than otherwise.

The rapid decrease of the sensitiveness of the urethra will be noted after the electric current is used. This treatment may be given first three times a week; but, after the sensitiveness has abated somewhat, daily applications may be made. In

cases of long standing, particularly those in the second or third stage, the sensitiveness all disappears except in a circumscribed spot. On closer examination it will be found that this spot marks the opening of the spermatic ducts into the urethra. In this case, a sound which is partially insulated, as in Fig. 3, should be introduced so that the uninsulated part, which is the bulbous portion, comes in contact with the sensitive spot, and a current of four or five milliampères given for from one to one and a half minute. This is not current enough to produce any electrolytic disintegration of tissue, but the alkalines set free are sufficient to produce the desired result. I have, by this treatment, cured a case after the application of nitrate of silver had failed. The current has here, also, another important action: It stimulates to contraction the muscles of the dilated ducts, which are always more or less paralyzed in the later stages, and thus prevents the constant escape of the semen. This treatment should not be given oftener than once or twice a week.

When there is evidence that pollutions are the result of paresis of the seminal ducts, if the urethral treatment does not entirely relieve it, applications of either galvanism or faradism should be given through the rectum. It is best to begin with a coarse coil faradic current, and if, after treatment of two or three weeks, thrice weekly, there are no signs of improvement, galvanism should be resorted to.

Of course the irritable condition should entirely have disappeared before the faradic current is used in the rectum, as its stimulating qualities are such as to render the condition more irritable, but in the paralytic stage there is no danger. If faradism is given, the ordinary rectal electrode, as in Fig. 4, may be used. This is introduced to a point above the prostate; the other pole, attached to a flexible hand electrode of good dimensions, is placed well forward upon the perineum and a current of a strength that is easily bearable given for from eight to ten minutes. It is unsafe to use a sufficient strength of current of galvanism in the rectum with such an electrode, as the electrolytic action of the current is liable to destroy tissue. For this purpose I have had constructed for me an electrode which obviates all this danger. It is represented in Fig. 5. It is covered with hard rubber, which perfectly protects the metallic parts from coming in contact with the membrane. The end to be introduced has a small metal bulb inside the rubber sheath. In this sheath are narrow slits, and, as it is much larger than the metal bulb, it is absolutely impossible for the latter to come in contact with a fold of the mucous membrane, no matter how small that fold may be.

FIG. 4.

It is used as follows: Introduce the bulb well up into the rectum (about two inches), attach a Davidson's syringe to the projection seen at the lower surface of the instrument, and inject water, which is forced through the hollow tube and through the slits of the bulb into the rectum. The patient will inform you when the rectum is full, and it is best not to inject too much, as it may be forced back by a spasmodic action of the intestines. This liquid

FIG. 5.

acts as a conductor. The treatment given with this instrument possesses one great advantage: that is, the current acts upon the whole surface of the rectum, as far as the liquid has gone.

The current strength of ten milliampères may be given two or three times a week, the negative pole being attached to the rectal electrode. It is even better to use this electrode with the faradic current, but this is not so absolutely essential as it is with the galvanic.

If the patient is constipated after the treatment

has been given with the electrode on the perineum, this may be removed to the abdomen and applied labile over the large intestines and sigmoid flexure, the other electrode remaining in the rectum.

When we come to the spinal treatment, we must consider the stage of the disease. In the irritable stage, a good-sized electrode—from three to five inches—should be placed over the lumbar region, and the positive pole attached, the negative being applied to the perineum, as we wish to produce anelectrotonus or a state of decreased irritability in the lumbar spine. The current should be gradually raised to its maximum of from eight to ten milliampères, and, after remaining there for three or four minutes, as gradually reduced to the zero point, care being taken not to interrupt the current, as in such a case the opposite effect will be produced. Treatment of this kind, given three times a week or oftener, will be found of service in allaying the irritable stage of this disease.

If, however, we wish, instead of allaying the irritability, to overcome a paresis of the cells of the lumbar cord, we reverse the position of the poles; or, if one should possess a static battery, sparks may be given over the spine.

In those cases that recover, it will generally be found that there remains more or less impotence, which will demand treatment; but, in order to avoid repeating, I refer the reader to the section on that disease.

Medical Treatment.—When a case of spermatorrhea presents itself for treatment, the genital system is generally in an irritable and over-excited state, and great care should be taken not to give any remedy to increase this excitability. Phosphorus, cantharis, and other remedies of this class, should be studiously avoided—that is, when given for their physiological action. I believe such treatment as this has done much harm in spermatorrhea.

The recognized medical treatment of the old school is to first give a sedative treatment, such as the bromide of potassium, camphor, hypobromate of hyoscyamine, chloral hydrate, etc., and afterward a tonic treatment.

Dr. Gross,* in speaking of the sedative treatment, says: "Under all circumstances, 30 grains of bromide of potassium, along with about 10 drops of the fluid extract of gelsemium every eight hours, and $\frac{1}{60}$ of a grain of the sulphate of morphia on retiring, are worth all the other remedies combined."

One who has witnessed the results of this treatment cannot but admit that it has great effect in reducing the number and frequency of the emissions, but there are two objections to it: These are powerful remedies, and their administration cannot be continued indefinitely without injury to the patient, and it has been my experience that, when the treatment is discontinued, the frequency of the

* "Diseases of the Male Sexual Organs."

emissions return. Perhaps they do not at once return with the same frequency, but nearly so, and, if left to themselves, the frequency increases to where it was before treatment. The second objection is, that the patient's general condition does not improve when the emissions are stopped by this treatment, as it does when they are relieved by other methods.

I once had an opportunity of observing two cases that were of about equal severity; one was treated by Dr. Gross's method, given above, while the other was under no special medical treatment, but used the ring and electric bell, previously described, to prevent the emissions. Regarding diet, hygiene, and all other treatment, the two were handled the same. The difference with which the two improved in respect to their general condition, was marked from the first in favor of the latter, or the one which used the ring. The explanation, I believe, is simple. The action of these powerful drugs upon a sensitive and deranged nervous system will impair its natural recuperative power.

There is one remedy, the sesquic tincture of iron, given as a tonic by the old school, which is claimed by Dr. Milton* to have also a specific effect in reducing the number of emissions. I am not prepared to state whether it has any such specific action, or whether its tonic effect alone is the

* "Gonorrhea and Spermatorrhea."

reason of its having such good results; but I do know that it is one of, if not the most, valuable remedies we have for the treatment of this disease when properly administered.

While Dr. Milton recommends the sesquic tincture, which is the older preparation, the United States Pharmacopœia classes it as identical with the perchloride of iron, and that is the remedy that will have to be prescribed in this country. There is a great difference in the strength of different preparations of the perchloride of iron. It should, therefore, be obtained from a perfectly reliable pharmacist.

The method of administering it is to begin with from fifteen to twenty drops twice a day, and increase gradually to about forty- or fifty-drop doses. Dr. Milton crowds it to sixty drops twice daily. It is found, however, that, if it is crowded beyond a certain limit, it has a tendency to increase the pollutions, which is proof that it is homeopathic in its action. It is, therefore, important to watch its action carefully and not increase the dose too far. It sometimes produces griping pain; but, if the dose is begun low enough and the increase is not too rapid, there is not so much danger of this. If, however, pains should occur after its administration, they can generally be avoided by giving a teaspoonful of Forbes' diastase, either just before taking the iron or with it. The best method of administering

it is to put the iron in a half glass of water, mixing a teaspoonful of the diastase in the same, and this taken through a glass tube so as to prevent its action on the teeth.

Small doses of iron have a tendency to constipate the bowels. This should be overcome by some means—by electrical treatment, diet, or by medicine. One of the best methods is to give the patient eight or ten drops of hydrastis in a glass of hot water thirty minutes before breakfast. With the large doses there is not so much trouble with the constipation—in fact, we may have diarrhea. Large doses of iron do not have a much greater tendency to produce constipation than small ones, and, as the dose is increased, there is an increase in the hydrochloric acid, which has rather a laxative effect, and, as has been stated, sometimes produces diarrhea.

The homeopathic treatment of this disease will be found most beneficial, if care is taken to select the proper remedy. Physicians who are homeopaths in general practice seem not to prescribe homeopathically in this disease. The trouble has been that prescribers have confined themselves too much to local symptoms, and have not taken the general symptomatology of the drug and of the patient into consideration.

The symptomatology of the following remedies have been most carefully compiled. The symptoms have not been taken promiscuously, but have been

selected in regard to the peculiarities of the disease. I have confined myself to the selection of the local symptoms, as the general symptomatology may be so varied that, in order to cover it, it will require a compilation of the whole materia medica. The notes added after each remedy have been either verified by myself or are from reliable sources.

Special Therapeutics for Spermatorrhea.

AURUM MET.—Discharge of prostatic fluid, with a relaxed penis; settled melancholy, with suicidal mania; night erections, without emissions of semen, or nightly erections and pollutions without any subsequent weakness; testes on the verge of atrophy, or undeveloped boy pining, depressed, weak. Strong erections, which cease on attempt to copulate.

Note.—This remedy has been used for seminal emissions when they did not cause weakness, although, from their character, it seemed that they should; and, also, for atrophied, undeveloped testicles from masturbation in boys. The mental condition characteristic of the drug is generally present when it is indicated.

CALCAREA CARB.—Sexual desire greatly increased at 3 A. M. Excessive sexual desire, with retarded erections and too early emission of semen during coitus; burning and stinging during discharge.

Nocturnal pollutions which debilitate the body and mind; night sweats follow every emission, or, after marriage, every coitus is followed by weakness of mind and body; lassitude and weakness in lower extremities.

Note.—Indicated in nocturnal pollutions occurring about 3 A. M. or after, when there is a great sexual desire associated with weak, excitable erections, great sensitiveness of the urethra and irritable impotence, particularly when associated with a leucophlegmatic constitution and other symptoms which call for the drug.

CANTHARIS.—Sexual desires increased; disturbing sleep at night. Strong and persistent erections, painless and without voluptuous sensations. Frequent nocturnal emissions; spermatorrhea from a relaxed penis early in the morning without sensation; *partial blindness for an hour or two after an emission.*

Note.—Has been used in spermatorrhea when accompanied by persistent erection without particularly voluptuous sensations, and when the characteristic urinary symptoms are present. There is great despondency, inability to apply himself to work, and his life becomes a burden.

CARBO VEG.—Onanism at night. Seminal discharges too soon during coitus, followed by roaring in the head. Discharges of prostatic fluid while straining at stool. Emissions without much sensa-

tion. Emissions excessive, which painfully shake the nerves; then burning in fore part of urethra, with cutting and burning when urinating and renewed on pressure. Hypertrophy of the testes.

Note.—The above presents a perfect picture of the later stage of nocturnal emissions.

CHINA.—Impotence, with lascivious fancies. Nocturnal emissions frequent and debilitating. Consequences of excess or excesses, or long-continued seminal losses; onanism.

Note.—Use mostly for the general debility from seminal losses, either from seminal emissions or excessive indulgence.

COBALTUM.—Nocturnal emissions with lewd dreams; pollutions waking him from sleep. Emissions without erections during sleep, but with lewd dreams. Impotence and emissions without erections.

CONIUM.—Sexual desires without erections. Emissions without dreams. Discharge of prostatic fluid on every change of emotion, without voluptuous thoughts, with itching of the prepuce. Bad effects from suppressed sexual desire or from excessive indulgence. Cutting through middle of scrotum between testicles backward to and above root of the penis. Sticking in outer side of left testicle, then burning. Griping in testicles in evening, with tearing. Premature senility; atrophy of the testicles.

Note.—Useful in those cases of advanced nocturnal emissions or diurnal pollutions, the result of suppressed sexual desire, or excessive indulgence, when there is stabbing, burning, and tearing pain in testicles. The general action is on the motor and vaso-motor nerves.

DIGITALIS.—Spermatorrhea; irritation of sexual organs at night. Pollutions always accompanied with lewd dreams and subsequent pains in penis. Nightly emissions, with great weakness of genitals.

Note.—This remedy is indicated in those cases of nocturnal emissions which are accompanied by irritable erections and profound nervous symptoms, with palpitation of the heart on least exertion.

DIOSCOREA.—Sexual desire diminished; emissions during sleep without erections; genitals cold, relaxed. Emissions followed by weakness, especially weak knees, and depression in spirits. Strong smelling sweat on scrotum and pubes.

Note.—Indicated in nocturnal emissions when there is general atony, as indicated by the cold, relaxed condition of the organs.

ERYNGIUM AQUAT.—Excessive erotic priapism; nightly emissions, with erections; semen passes by day with urine; lassitude and depression. Decrease of vital power; dull, dragging pain in lumbar region.

GELSEMIUM.—Sexual organs irritable and weak. Involuntary emissions, without erections. Emis-

sions of semen during stool. Genitals cold, relaxed; dragging pains in the testicles. Seminal weakness from irritability of the seminal vesicles. Nocturnal emissions and lewd dreams, followed next day by general languor and irritability of the mind.

Note.—Gelsemium is indicated in those advanced stages of spermatorrhea which occur as nocturnal emissions without dreams or diurnal pollutions, accompanied by irritable impotence, and when the organs are cold, relaxed, and in an atonic condition. It is said to be particularly indicated in those conditions where the result of masturbation has produced an irritable weakness of the seminal vesicles and ejaculatory ducts.

GRAPHITES.—Impotence with dislike to coition; want of proper sensation during coitus; almost involuntary emissions without erections; nocturnal emissions with flaccid penis; ejaculation does not follow coition in spite of every exertion; almost involuntary emission, without an erection, during an embrace; emissions almost every night from debility of the organs; herpetic eruption on scrotum.

Note.—This drug is indicated in advanced spermatorrhea, when it is accompanied with neurotic aspermatism.

HAMAMELIS.—Emissions at night without being aware of it; headache; depression of mind. Emission at night without sensual dreams. Pain in

spermatic cord running into testicles; frequent pain in testicles all day; drawing pain in testicles; great prostration of animal passions, with severe neuralgic pains in testicles, changing to bowels and stomach, causing nausea and faintness.

Note.—Indicated in advanced stages of spermatorrhea with neuralgic pain in testicles.

KALI BROMATUM.—Desire lessened even to impotence. Seminal emissions, with depressed spirits; dull thoughts, backache, staggering gait, and great weakness. Nocturnal emissions with amorous dreams and erections. Excessive sexual desire, with constant erections at night. Profound melancholia; loss of memory; great nervous prostration.

Note.—This remedy is found useful in two stages of spermatorrhea. First, in young men who are very amorous, allowing their minds to dwell on the subject, and, in consequence, suffering from constant, irritable erections, and, second, in the more advanced stage, where the patient suffers from the bad effects of the emissions or sexual excesses, when there is a loss of memory, melancholia, also, with impaired co-ordination, and tingling and numbness of limbs.

LACHESIS.—Nocturnal emissions with a thrill of delight. Excessive sexual desire, with constant erections at night. Emissions, with profuse night sweats. Emissions, with cheerful disposition and feeling of ease on awakening, succeeded by an in-

creased mental concentration; semen has a pungent odor; onanism, with epilepsy.

Note.—The symptom, the strong odor of the semen, has served as an indication for this remedy in spermatorrhea; the other symptoms are indicative of a case of physiological emission, rather than pathological.

NATRUM MUR.—Excessive irritability of the sexual instinct, but with physical weakness shortly after coition; pollutions. After sexual excesses, paralysis. Erections in the morning without sexual excitement. Sexual instinct dormant, with retarded emission during embrace. Frequent nocturnal emissions in spite of frequent embraces.

Note.—Indicated in those cases of spermatorrhea, accompanied with irritable impotence, where there is excessive irritability and when intercourse aggravates the emissions.

NUPHAR LUTEA.—Absence of sexual desire; even voluptuous thoughts do not cause erections. Involuntary seminal losses during sleep, at stool, and when urinating. Spermatorrhea atonic, from weakness of sexual organs.

PHOSPHORIC ACID.—Frequent and debilitating emissions from weakness of the parts, with onanism and very little sexual excitement. Onanism when the patient is disturbed by the culpability of his indulgence. Emissions at night without erections. Emissions at stool; milky urine.

Note.—To be used cautiously in spermatorrhea. Never to be used in the early stage, when there is general irritability; but in the later stages, when the patient is completely prostrated from an emission and when the organs are in an atonic condition.

PICRIC ACID.—Violent, strong, and long lasting erections, followed by profuse seminal emissions. Great sexual desire; violent erections at night preventing sleep; great weakness of lower limbs.

Note.—Picric acid is useful in spermatorrhea when it is accompanied by great desire and violent erections, which may not subside after an emission, and great prostration following the emission. It should be given in the higher potencies, as the lower ones are liable to aggravate the condition.

SABADILLA.—Pollutions followed by loss of power in extremities. Lascivious dreams and emissions, with relaxed penis; afterward painful erections and extreme lassitude. Insensible to caresses; is nauseated by amorous caresses. Desire lost; later can scarcely rid himself of voluptuous thoughts, though the penis is relaxed.

SARSAPARILLA.—Seminal emissions; lascivious dreams, with back ache, prostration, vertigo. The least excitement causes an emission, even without sexual feeling. Pollutions bloody. Spermatic cords swollen; sexual excitement makes them ache and sensitive. Inclination to coitus, with restless sleep

and frequent emissions. Offensive odor about genitals.

Note.—Nocturnal emissions, followed by backache, and when sexual excitement produces soreness in the spermatic cords.

SELENIUM.—Semen thin, without normal odor. Lewd thoughts, but physically impotent. Prostatic fluid oozes while sitting, during sleep, when walking, and at stool. Erections slow, insufficient. Semen emitted too rapidly and with insufficient thrill. Weak, ill-humored after an embrace; weakness in the loins; itching of the scrotum.

Note.—Indicated in those cases of spermatorrhea which have become well advanced and are in a state of irritability. Impotence from an exhausted condition and when the semen is too thin and without odor.

STAPHISAGRIA.—Cases of long standing masturbation with hypochondriasis. Penis relaxed, with dull and contusive pains in testicles; atrophy of testicles; brain fag; excessive sleeplessness.

Note.—This remedy is particularly indicated for the bad effects of masturbation, and its general character, such as great taciturnity, uneasiness about the state of one's health; fear of loss of memory, etc., belongs to an advanced stage of spermatorrhea.

USTILAGO.—Erotic fancies; emissions; prostrated, dull, lumbar pains; despondent; irritable.

Seminal emissions; irresistible desire to masturbate.

In addition to the above, the following remedies may be indicated: Agaricus, agnus castus, anacardium, anantherum mur., antimonium crud., argentum nitr., baryta carb., belladonna, berberis, bovista, bufo, caladium, calcarea phos., camphor, cannabis indica, cannabis sativa, capsicum, carbolic acid, cedron, cocculus, cypripedium, fluoric acid, helonias, hepar, hyoscyamus, ignatia, iris vers., kali carb., kali iodatum, ledum, lilium tig., lycopodium, magnesia carb., matico, mercurius, naja tripud., nux mosch., nux vomica, opium, phosphorus, platina, pulsatilla, rhus tox., sepia, silicea, stramonium, sulphur, tarantula, thuja, viola tric., zinc. Also consult special therapeutics of impotence.

IMPOTENCE.

A man enjoying good health, and in possession of all the normal functions of the body, must, necessarily, be capable of performing the sexual act. If for any reason, no matter from what cause, he becomes incapable of performing the act, he is impotent.

The requirements necessary to normal coition are: first, desire; second, erection; third, the power to maintain that erection not only for intromission, but for a sufficient length of time for a healthy partner to complete the orgasm; and, fourth, an orgasm accompanied both by pleasurable sensations and ejaculation of semen. A perversion of any of these functions constitutes impotence to a greater or less degree. The fourth, however, when existing alone, will be considered under sterility.

Before we proceed with the different varieties of impotence, it is necessary to understand the physiology of the sexual act. Erection, the essential condition to copulation, is the result of mechanical processes which cause the organ to fill with blood, producing an increase in size and rigidity. The most important of these mechanical processes is the increased flow of blood into and filling the arterioles

of the cavernous and spongy portions of the penis, which is caused by a relaxation of the muscular fibers of the cavernous tissue; at the same time there is a contraction of certain striped muscles which are to a degree under the control of the will; these, by their contraction, retard the return of the blood through the veins. This physiological congestion is under the entire control of the erigent nerves. It was thought by Eckhart that the origin of the erigent nerves was in the cerebrum and passed down through the crura, pons, and spinal cord, and were given off from the first to the third sacral nerves. The reason for Eckhart's conclusion was based upon experiments on a dog, in which he found that stimulation of the three upper sacral roots of the cord, of the pons and crura cerebrei, produced erection, and that, with division of the roots of these nerves, no erection took place.

Goltz discovered, when the lumbar segment of the cord was divided from the upper portion, full erections could be produced by irritation of the glans penis, and, therefore, concluded that the lumbar cord contained an independent reflex center of erection. The truth probably is that the motor cells controlling the muscles and vessels which are active in producing erection lie in the lumbar cord; that these cells do not act independently, but are stimulated into action by peripheral irritation of the genitals or the influence of the mind.

We know that peripheral irritation, irrespective of any mental desire, will, by reflex action, produce erection, and we also know that mental conditions, such as the sight of beautiful women, amorous thoughts, etc., will produce the same result irrespective of any peripheral irritation whatever. Erections are not always under control of the will, for they will take place against the strongest efforts to repress them, and the same efforts to produce them may fail. After erection is complete, it may subside from slight emotional causes, such as fright, disgust, etc., contrary to the strongest efforts of the will.

The act of ejaculation is, to a degree, also under control of the will, as shown by the fact that some men can prolong the act of copulation by retarding ejaculation; but this power is more acquired than it is physiological. The will power can never be developed, in a healthy state, to have sufficient control to produce ejaculations. They are physiologically produced only by friction of the glans penis, as in sexual intercourse by its contact with the vaginal walls, which, by stimulating the reflex centers of the spinal cord, causes a motor impulse to the vesicles, forcing out the semen in jets.

In a healthy state there is a certain amount of friction necessary to produce an ejaculation, and when the glands have reached such a degree of

sensitiveness that they require less friction to produce an ejaculation, they are in an abnormal state. The greatest physiological activity of the sexual organs is between the ages of twenty and forty, at which time it begins to decline, some men losing their power at sixty years, or even before, while others retain it much longer. I have seen one man possessing good sexual vigor at the age of eighty-six. Certain habits of life have a depressing effect on sexual activity. A sedentary life, or great and continuous mental exertion, have the same; but moderate exercise is stimulating.

Impotence manifests itself in various forms. It is, therefore, necessary, in order to describe its various manifestations, to divide it into some natural classifications. In fact, some of these classifications are so distinct they might be described as different diseases, were it not that the principal condition, the lack of power to perform the sexual act, is the same in all. There have been various classifications given, but I shall follow those adopted by Dr. Gross:* Atonic impotence, psychical impotence, symptomatic impotence, and organic impotence. I shall go a step further than Dr. Gross, and divide atonic impotence, which is the most important classification, into two classes, irritable impotence and paralytic impotence, and shall include relative impotence as a special form of psychical impotence.

* "Diseases of the Male Sexual Organs."

ATONIC IMPOTENCE.

Irritable Impotence.—The irritable form of atonic impotence is the one most commonly met with. A man suffering from irritable impotence first discovers, on attempting intercourse, that the ejaculation is premature. In normal coition, ejaculation does not take place until a series of movements have occurred, which, by friction on the glans penis, heighten the exalted sensibility. When this has reached a certain stage, ejaculation takes place through reflex action of the motor centers. If there is true impotence, by which I mean a contradistinction of psychical impotence, which frequently takes this form and which is considered further on, such a condition is always associated with more or less weakness of the sexual system, erections will be found to be more or less feeble, and one of the first signs of failure will be noted by the patient not being able to maintain an erection, if, for any reason, he is obliged to wait for his partner. A married man may have an erection and make approaches to his wife, who, in order to prevent pregnancy, gets up and prepares some form of prophylactic, such as filling a syringe with hot water, or inserting a lozenge, sold by druggists for the purpose, and, by the time she is ready, his erection has subsided. If such a case is the result of excessive venery, the symptoms first noted may be so slight as to hardly

attract attention; but the weakness will gradually increase until erections are incomplete, and ejaculations may take place even before intromission.

On the other hand, a patient may consult a physician, and say that he has never had sexual intercourse until recently, and has failed. Perhaps he has just been married, and, for the first time, has discovered his inability to perform the sexual act on account of premature ejaculation. Here care should be exercised to diagnose true impotence or psychical impotence. Such cases will always present the history of masturbation, so far as my experience has been, if it is true impotence.

It is perfectly natural that in a young man, with the seminal vesicles crowded with semen; over-excited by his eagerness to consummate the marriage; with the nervous system in a state of tension and the sexual organs very hyperæsthetic, ejaculations should be premature on attempting the act; but in such a case the erection will be vigorous and another will soon take place. The second attempt will generally be more successful, and, after two or three trials, the hyperæsthesia disappears, and normal coitus is established, which act is a stimulus to the organs. On the contrary, if the premature ejaculation is due to some actual physical weakness, the erections will be feeble, more marked on the second attempt, and, if persisted in, there will be total lack of erection.

In these cases of irritable impotence, desire for intercourse is usually present, and may be quite excessive.

Another patient who has always had the power to copulate may consult the physician, but, after some sickness or mental strain on his part, he suddenly finds that he is impotent. Inquiry into the history of this case will generally disclose that the patient had been taxing himself sexually before the sickness which the impotence followed; that he had not noticed any particular loss of power, but was really on the verge of impotence, and, when the extra strain on the general system came to reduce it, the overburdened sexual organs partook of it and collapsed, as it were.

The three subjoined cases will illustrate the different types I have attempted to describe:

CASE V. A married man, thirty-one years of age, had been a masturbator from his tenth to his eighteenth year. He married in his twenty-third year. According to his statement, he indulged excessively in sexual intercourse until his thirtieth year, when he first noticed that his ejaculations were premature. He did not at first discover any loss of power of erection; but by the end of the year the power of erection was greatly diminished, and he was hardly able to penetrate the vagina before an ejaculation would take place. When I saw him at this stage, he was, at times, exerting all his power

to force an erection, and, when he accomplished it, which was not oftener than once in a fortnight or even longer, he would make an attempt at coitus, which, however, ended in total failure. This, he informed me, had been his practice ever since he noticed the beginning of the loss of power of erection, as he thought, if he did not make every effort to keep up the practice, he would become totally impotent.

It is not uncommon to find that when the failing of the sexual powers becomes apparent to men, instead of giving them the much needed rest, either from fear that by rest they will become impotent, as in the case just cited, or, more generally, through chagrin on their part, try to make up the loss by extra efforts, and thus increase the disease and endanger the prospects of recovery.

CASE VI. A young man, age twenty-three, had masturbated from his fourteenth to his twentieth year. He had lived a continent life, but had suffered from nocturnal emissions. The first time he attempted sexual intercourse was on his wedding night. He had had no thought but that he would be perfectly able to perform the sexual act, and was surprised to find that ejaculation took place before intromission. He afterward tried a second time, with but little better results. After several trials, running through some space of time, I know not how long, he was able to penetrate the

vagina, but immediately afterward would have an ejaculation. He soon discovered that his erections were growing feeble and far between, and when I saw him, about one month after his marriage, he had ceased to have erections, and had but very little desire.

CASE VII. Æt. forty-two. Had masturbated in his youth, but could give no definite idea of the period it covered. Married at twenty-five years of age, and had indulged freely in sexual intercourse. It was also a practice with him to prematurely withdraw at a period just before and after the catamenia, so as to prevent pregnancy. After his fortieth year, when, in 1890, the first scourge of grip visited this country, he was a victim of one of its severest catarrhal attacks, which left a bronchial cough for months. During this attack his wife had a severe sickness which continued for some months after he recovered. When he undertook to have sexual intercourse after her recovery he was surprised at the quickness of the ejaculation, which condition continued, and even grew worse, accompanied with feeble erections. When I saw him, about one year and a half after the attack of grip, he was unable to get an erection oftener than once a month, and sometimes two or three months would elapse, and, if he undertook to have sexual intercourse at those times, ejaculations would take place before intromission.

With the irritable form of impotence there is gener-

ally no change in the appearance of the organs, or in the sensitiveness of the integument of the penis. The urethra, however, presents a condition which might almost be said to be pathognomonic. The whole urethra is sensitive, the prostatic portion excessively so. This is due to a congestion which may extend to the neck of the bladder, and cause frequent desire to urinate. The patient may be gloomy, thinks he is of no use in the world, that his condition is known to others; in fact, gets into the depths of despair. The general health is usually fair, but the patient suffers more or less with nervous irritability. There is a heaviness and weakness in the limbs. The patient fatigues easily on attempting bodily exercise, but particularly so on walking or standing. The same is more or less true of his intellect. Sometimes he complains that his thoughts are shrouded by a mist, and he is easily fatigued on attempting laborious mental work. Sleep is generally restless. In other words, those conditions are present which we are accustomed to meet with in neurasthenia. Perineal spasms and irritability of the rectum are frequent accompaniments. So long as the patient is able to have erections, desire remains, but, as a rule, diminishes with erections. There are exceptions to this rule and desire may remain after erections have ceased; but, if the patient is not relieved by proper treatment, desire will soon be lost.

Paralytic Impotence.—While belonging to the same category pathologically as irritable impotence, —both belong to the atonic group,—a well developed case of paralytic impotence is quite distinct in its clinical characteristics. Paralytic impotence may be simply an advanced stage of irritable impotence, or it may come on in an entirely different manner. When one follows the other, it is important to know where the one leaves off and the other begins. The point of division most easily recognized in practice is, when a case of irritable impotence reaches that point where erections can no longer be produced by the patient and he has lost all desire for sexual intercourse, it has become a case of paralytic impotence. The former condition, loss of power of erection, may exist with irritable impotence, desire remaining; but, when combined with the loss of all desire for intercourse, it is safe to diagnose paralytic impotence. When paralytic impotence does not follow irritable impotence, it will generally be found between the ages of forty to fifty-five years.

Of the seventeen cases of paralytic impotence not following irritable impotence that I have examined and treated, one occurred in the forty-third year, two in the forty-sixth, seven in the forty-seventh, four in the forty-eighth, and three from the fiftieth to the fifty-fifth year. There are, perhaps, many cases of paralytic impotence occurring after

the fifty-fifth year; but they should be considered rather as physiological decay than pathological.

When paralytic impotence follows the irritable form, it generally makes its appearance earlier in life. Some patients will tell you they noticed a gradual decline until erections became very infrequent and finally all power of erection was lost, with, at the same time, loss of all desire. Others will tell you they discovered no decline until suddenly the organs seemed to lose all power, and within a few months both erection and desire ceased. A large per cent. of the cases I have seen followed forced abstinence of sexual intercourse in married men. Of the seventeen cases before mentioned, seven followed widowerhood; one followed a long sickness of the wife, forcing abstinence on the husband's part, and a third was separated from his wife for over two years. Of these nine cases two had noticed a marked decline in sexual powers, but not total loss, some time before the forced abstinence. The other seven had not noticed any more decline than they thought natural to their increasing years. Four of the widowers had remarried before they discovered the impotence. The man separated from his wife had reunited with her, when he discovered, to his chagrin, he was impotent. The others all recognized that they no longer had erections and had, consequently, not remarried. The remaining eight

cases lost their power gradually. One was the most inveterate smoker I ever knew, another both smoked and chewed tobacco to excess, three were chronic alcoholics, and with the remaining three nothing but over-indulgence could be cited as a cause.

As has been stated, the chief characteristics of paralytic impotence is entire loss of erection and desire for sexual intercourse. Even the morning fullness of the bladder fails to excite the least erection. When the disease has become established, the organs have a senile look, the body of the penis is shrunken, leaving the integument in wrinkles; there is more or less anæsthesia of the integument of the penis, and it has also lost its sensitiveness to galvanic reaction. The testicles are atrophied and soft and doughy to the feel, and the scrotum is generally relaxed. Instead of the meatus being congested and everted, and the whole urethra being congested and hypersensitive, as in irritable impotence, they are generally less sensitive than normal and the lips of the meatus pale and inverted. The general health of the patient, as a rule, is good. He seldom gives way to the gloomy forebodings characteristic of other forms of impotence, owing, no doubt, to his age, experience, and philosophical way of looking at things; or, what is more probable, it is due to the more natural manner the impotence has come about, for it is evident, by

the conditions present, that the whole sexual system has gone through a general process of decay. There has been a condition described as partial paralytic impotence,* in which the penal organ is capable of sufficient erection for penetration of a capacious vagina ; but, instead of the semen being discharged in jets, oozes or dribbles away and may continue to do so after the penis is withdrawn. I have never seen but one such case, and that was diagnosed and treated, as will be seen by the following recital of it, as atrophy of the prostate.

CASE VIII. The patient, a man of about forty years of age, had had stone in the bladder, which was crushed with a lithotrite. Some time before the operation he noticed, in having sexual intercourse, that the semen did not come away in jets, as it had formerly done, but dribbled out, and continued after withdrawing the penis. It was found that this condition did not improve after crushing the stone, as was thought it would; the diagnosis of atrophy of the prostate was made, and the patient was sent to me for electrical treatment. He was given three treatments a week, varying from ten to fifteen minutes in duration. The faradic current was used. One electrode was introduced into the rectum and carried up to the prostate, the other, a flexible hand electrode, was pressed

*Prince A. Marron, M. D., "System of Genito-Urinary Disease," vol. i.

well forward on the perineum. The patient showed signs of improvement after the second week's treatment, and in nine weeks he had recovered to such an extent that the semen was all ejected before the penis was withdrawn. He considered himself cured, and discontinued treatment.

PSYCHICAL IMPOTENCE.

As the physician will readily understand, by psychical impotence we include that class of cases where inability to copulate is due to a mental condition. The fact that such a condition as psychical impotence exists, is a proof that the mind exercises a great influence over the genito-spinal centers.

After studying a number of cases, I am satisfied that fewer cases of pure psychical impotence exist in persons whose sexual system is healthy than is generally supposed. A large number of the cases diagnosed as psychical impotence have a starting point in sexual neurasthenia or irritability of the organs, and it will be found that they present a history of masturbation and, generally, seminal emissions. The practice of masturbation and the seminal emissions have not only weakened the organs, but have first suggested the fear of impotence in the mind of the patient, which, when dwelt upon and the fear confirmed by failure, has produced the psychical state.

Psychical impotence exists almost exclusively in young men. It is rarely seen after the age of thirty. This is due to the more matured and philosophical state of the mind later in life, and, also, to the lessening of that amorousness characteristic of youth which, by its very intensity, precipitates failure.

A young man undertakes to have sexual intercourse with a prostitute. Perhaps his undertaking is purely for novelty's sake. Perhaps it is to try his powers before marriage; or, it may be that he has been perusing some quack literature and thinks he has discovered he is impotent and seizes the first opportunity to demonstrate whether he is or not. He fails. This failure may be due to various causes. I have never talked with one of this class that did not acknowledge that the element of fear of catching some venereal disease, when they undertook the illicit intercourse, was present, and it undoubtedly played a very important part in the failure. The disgust felt for the prostitute, who was, perhaps, dirty and disgusting in person, together with the high-strung, excitable state of the nervous system, all conspired to the failure.

CASE IX. I was consulted by a young man whose marriage was to take place within a fortnight. Fearful that he might be impotent, four days previous to consulting me, he undertook coitus with a prostitute, who suddenly began to raise wind from the stomach, and complained of nausea.

This had the effect of causing an erection to at once subside, and he was unable to complete the sexual act. This created such a fear, on his part, that he contemplated breaking his engagement. I found, upon questioning him, that he had masturbated in his boyhood and had had a few emissions. He had plenty of desire and vigorous erections. I assured him his impotence was purely psychical, and explained to him how different was illicit intercourse from that of the marriage state, and persuaded him not to break his marriage engagement. He informed me afterward that he had not the slightest difficulty after marriage.

Another class is where a man is taken by surprise by a woman of his own station in life, and whom he least suspected, making advances to him. The excitement of the surprise, made worse by the amorousness of the woman, and, perhaps, fear of impregnating her, all conspire to the failure. The following case will illustrate the condition better than I can describe it:

CASE X. Some fourteen years ago a young man, living in the same boarding house with me, received advances from a young woman, who was also a boarder, and made an appointment for her to visit his room when a younger sister, her room-mate, fell asleep. In a very amorous state of mind he waited for her. When she entered his bed he was surprised and chagrined to find he had an emission

before an attempt at penetration was made. He, however, succeeded by using all his own efforts and the assistance of his partner, in getting another erection, but, before he was able to completely penetrate the vagina, a second ejaculation took place. His amorous partner would not let him go, but clung to him, which increased the horror of his situation. I was called. When I entered the room he was sitting up in bed with the most frightened look I ever saw on a human countenance. In answer to my interrogations as to what was the matter, he exclaimed, "I am ruined!" and suddenly began sobbing like a child. After he had given me a history of the occurrence, I tried to persuade him that his trouble was purely psychical, but did not succeed. Since writing this article I have looked this man up and had a conversation with him. I find he has never married, that he believed himself impotent for six years, when he was thrown in the secluded company of a semi-prostitute, who made advances to him which he at first spurned, but was finally persuaded to attempt, when, to his surprise, he had no trouble.

Again, a young married man may be over-anxious to consummate the marriage. His nervous system is strung to the highest pitch—perhaps anxiety and fear are mingled with his anticipations. He fails. The mortification produced by his failure has the most depressing effect upon him. He immediately

begins to mistrust his powers, which has a still more depressing effect, and the result is he fails again; or, perhaps, is not able to make a second attempt. The result is, the patient is practically impotent. This preys upon his mind to such an extent that he becomes morbid and melancholy to a degree seldom witnessed in the other forms of impotence.

Relative Impotence.—Relative impotence is a special form of psychical impotence, its characteristics being, that while with certain women and under certain conditions a man is potent, and with other women and under other conditions he is impotent. A man may be capable of performing the sexual act with a brunette and yet be incapable with a blonde.

The case reported by Roubaud, and which has been copied in nearly every text-book dealing with impotence, in which a man in his youth had intercourse for four years with a woman somewhat older than himself, who was a blonde, and, for protection, always had on a corset and a silk skirt, found that, in after years, he was unable to cohabit with a brunette, or with any woman except a blonde wearing a corset and silk skirt, is one of the freaks which are liable to be met with, but are not at all common.

I wish to call attention to two forms of relative psychical impotence, which, according to my experience, are rather common—one being in a relative

sense to different women and the other to circumstances. A married man becomes disgusted with some act of his wife which he thinks indecent, and it destroys all desire on his part for sexual intercourse with her. More frequently, however, the cause is otherwise. The husband is of an amorous and perhaps affectionate nature, while the wife is just the opposite. She resists his advances and, when she occasionally consents, she does it as a matter of duty, in a cold, methodical manner which chills his ardor. He begins to think himself a brute, torturing his wife for his own pleasure. His amorous desires decrease, sexual intercourse becomes less frequent, until the very thought of the act disgusts him, and he becomes practically impotent. At this time he is liable to meet some woman who arouses his passion, he cohabits with her, and finds that all his normal passions and desires return. It is just such circumstances as these that are the cause of the existence of thousands of the so-called kept women in this city, the private paramours of married men. I have seen cases where men were fond of their wives, enjoyed their society, but they never had desire to have sexual intercourse with them. They thought, perhaps, they might accomplish it with difficulty. It would not, however, be spontaneous, but forced on their part. All these men were potent, and admitted they enjoyed sexual intercourse with other women.

Of the second class, when relative impotence is due to conditions and circumstances, rather than individuals, I once saw a case of a man happily married, that, if his wife made an advance to him, or if he thought she was expecting him to make advances to her, he was utterly unable to get an erection. He was, however, always able to take her unawares and accomplish the act.

I have been consulted by four men who always had strong erections whenever thinking of sexual intercourse or of certain women; but, if they made an appointment to meet these women, the minute they reached the secluded spot erections failed. Two of them told me that, instead of the penis enlarging, it contracted smaller than normal; but these men were capable of success when they felt they were not expected to perform the act.

Varieties of this form of psychical impotence may exist. For instance, I have seen a case where, if the man attempted to have sexual congress with a woman where he would feel greatly mortified if he did not succeed, he would be sure to fail; but if with a woman where no such feelings existed, he always succeeded.

SYMPTOMATIC IMPOTENCE.

Symptomatic impotence may be divided into two classes: First, when due to some poison or medicine introduced into the system; and, second, when

due to some disease of the body or lesion of the nervous system.

The first class is often the result of prolonged medication. I have seen one case due to the long-continued use of kali bichromicum 2x for catarrh. Cases are reported from the prolonged use of arsenic in skin affections. A young physician came under my observation some years ago, who had become addicted to the morphia habit. He took a very strong preparation, of his own compounding, by the mouth. When he reached the enormous amount of twenty grains a day, erections ceased. He continued increasing the amount until he reached twenty-five grains of the sulphate of morphia a day, incredible as this may seem. He finally mastered the habit sufficiently to reduce the amount to ten grains a day, when he had feeble erections at first; but, after two weeks, although the drug was not increased (I only have his statement for it), erections disappeared. About this time an obscure spinal trouble developed. During the first two weeks of this sickness he had vigorous erections, almost priapism; but later they disappeared. He died in a convulsion several weeks later, and when apparently recovering from the spinal disease. I might mention that, when the spinal trouble developed, the morphia was suddenly stopped.

Cases are reported from the prolonged use of bromide of potassium, chloral, cannabis indica, and from

the poisonous effects produced by working in antimony, lead, and mercury.

When a case of impotence in a healthy young man has appeared rather suddenly, and there is no apparent cause, such as excesses of any kind, inquiry should be made regarding his occupation or habits. See if he is not addicted to some habit, such as inveterate smoking, intemperance, etc., as these have a tendency to produce impotence. Perhaps he may be suffering from too much patent medicine containing some of the drugs mentioned above. This may often help out in getting at the cause of the trouble. I have seen one case where the taking of a small quantity of alcoholic stimulant would produce temporary impotence.

The kind of impotence manifested in these cases is generally of the irritable type, and varies, in degree of severity, according to the poison and to the length of time the patient has been under its influence.

Of the second class of symptomatic impotence, chief among the causes are diseases or lesions of the spinal cord and brain. In certain spinal affections, of which locomotor ataxia is the chief one, priapism may mark the initial lesion, but impotence is liable to follow its progression. Inflammatory affections of the cord, as well as injury, nearly always affect the sexuality. The same is true of the brain. Certain functional disorders also affect the sexual

powers, but not to the same degree as organic lesions. When due to the latter cause, the impotence is more liable, although not always, to be of the paralytic type; but, when due to the former, it is more frequently of the irritable type.

Certain functional diseases may produce a greater or less degree of impotence. Diabetes, spinal irritation, brain irritation, etc., are some of these causes.

ORGANIC IMPOTENCE.

By organic impotence we understand that some physical deformity, of such a nature as to preclude sexual intercourse, exists. This may be either congenital or acquired. It is not necessary for me to describe all the conditions which may prevent sexual intercourse, as they will be apparent to anyone. I will, however, for completeness' sake, mention the most common forms of physical defects which may preclude sexual intercourse. Vicious direction of the penis is one of the most common causes. This may be due to a fibrous deposit in the erectile tissue, preventing that part of the organ from enlarging when the blood flows into it, consequently it takes a crooked direction, which may be sideways, but generally the direction is downward, as the deposit is in the corpus spongiosum—the result of a gonorrhea. Congenital shortening of the corpus spongiosum or frænum may produce the

same result. Shortening of the penal organ, either congenital or acquired, may prevent satisfactory intercourse, or, the penis may be buried in an elephantiasis or large inguinal hernia so as to preclude its usefulness. Extra size of the penis has been mentioned as a condition causing organic impotence. *Epispadias* and *hypospadias* may be the cause of sterility, but not, necessarily, impotence. Certain abnormalities of the testicles, such as their absence or non-development, either congenital or acquired, may cause impotence, as well as certain diseases of them; but they do not necessarily produce impotence, as eunuchs are sometimes capable of erections sufficient for intromission. They are sure to produce sterility (under which they will be considered).

Pathology.—The pathology of impotence, while varying slightly with the different forms of the disease (organic impotence excepted), depends upon the loss of power of the cells in the lumbar cord which preside over erections, and which is due to various causes. When symptomatic impotence is due to a disease of any part of the nervous system, which either destroys the cells themselves or prevents their action through their conductive paths, thus cutting off their influence direct, or the reflex action which carries to them their stimulus, the pathology is simple.

There is another class of symptomatic impotence

where the nervous system is not primarily affected, but is secondarily. Why should diabetes not produce impotence in one person, and in another, equally strong in other respects, cause total loss of power of erection? Would anyone claim that diabetes affects the nerve centers of the lumbar cord by first producing deep urethral congestion and by reflex action from that point affecting the cells? I have seen two cases of impotence following diabetes. Both were in men who had led moral, and, to a degree, moderate lives. Neither had ever had venereal disease or stricture. In one there was no deep urethral sensitiveness, while in the other it was markedly so, and this congestion increased with the progress of the diabetes. Under proper restrictions of diet the diabetes disappeared, sexual vigor returned slightly, but to a less degree than formerly, and the deep urethral sensitiveness disappeared without special treatment directed to it, proving very conclusively, to my mind, that the diabetes, by reflex action on the nerve centers, had weakened them and they, in turn, produced the irritable congestion of the prostatic urethra as well as being the cause of the impotence. With the one who did not have deep urethral sensitiveness, although the sugar entirely disappeared from the urine, sexual power did not return, and there followed the shrinking of the organ which is characteristic of advanced paralytic impotence. In one case there was a weak-

ened and irritable state of the cells in the cord, produced by the diabetes, and in the other the cells were more profoundly affected and paralysis was the result. This brings us to our question: Why did these cases have impotence from diabetes while hundreds of others do not? The answer, I believe, is that the nerve centers were weakened by earlier excesses or premature degeneration, and the strain which the diabetes produced by reflex action was too great for them to withstand in their enfeebled condition.

Exhaustion, to a degree, of the central cells, must necessarily exist before any trouble can, by reflex action, totally destroy the sexual powers. Just how much the impotence depends upon the deep urethral inflammation which has acted by reflex action upon the cells in the spinal cord, or how much a deep urethral congestion is due to a primary exhaustion of those cells, I am unable to say positively; but that strictures and deep urethral congestion are the cause of all cases of atonic impotence, as is claimed by some, I emphatically disbelieve. A large per cent. of the old men who have preserved remarkable sexual vigor that have come under my observation have had, in their younger days, or still have, strictures, and many of them deep urethral sensitiveness. I might also state, that to find a man in the sixties with hypertrophy of the prostate impotent is rare, compared with the number of

the same age not suffering with prostatic enlargement that are impotent. It stands to reason that the former has more congestion and irritation in the prostatic portion of the urethra than the latter. One man, sixty-three years old, with remarkable sexual vigor, had four strictures, the deepest one closed so that the urine had to be drawn with an aspirating needle over the pubes. Dr. S. F. Wilcox performed an external urethrotomy and found an organic stricture just in front of the membranous portion of the urethra, obstructing the passage. This man had had gonorrhea and gleet half his life.

As pointed out in the article on spermatorrhea, I believe deep urethral congestion is more often the result of a generally depressed, over-worked, neurasthenic nervous system than of local causes. There is no doubt, however, that deep urethral inflammation has a powerful effect upon the production of irritable impotence by its reflex action. But this reflex action upon the nerve centers is the same as the reaction of the core of a faradic battery upon the primary coil from which it receives its initial stimulus. I believe that the nerve centers have first become weakened by congenital or acquired causes producing local changes, as deep urethral congestion, etc., and which in turn react back upon the centers. I do not wish to minimize the importance of reflex action upon nerve centers, which

may produce many and varied complaints; but, as I have studied reflex conditions, they have had more of a general effect on the nervous system than they have in producing irritability and paralysis of the cells immediately controlling them. If deep urethral congestion is the cause of atonic impotence in the first or irritable stage, why, when it passes to the paralytic stage, does it all disappear? One would naturally think that, if the urethral congestion is the cause, when the disease advanced it would grow worse; at any rate it would not grow better, which, however, is the true state of the case.

Another point. Why does the congestion apparently increase when the general nervous system is depressed, and decrease as the nervous system improves, if the nervous system does not control the congestion, but the congestion controls the nervous system? Anyone who has had experience in this line will, I am sure, corroborate the correctness of this observation. Still further. There is a class of cases the cause of which is due to fondling women, where the initial cause is purely mental, and there has been no sexual intercourse, no stricture, and not necessarily masturbation, yet the deep urethral sensitiveness in these cases is as marked as in any.

Now, I believe, as I have before intimated, that the primary seat of the trouble is in the cells of the lumbar portion of the spine, which presides over the sexual function. These cells are closely connected

with the sympathetic system. In the first stage, or irritable impotence, the cells have become weakened; it takes but little to exhaust them, showing their extremely sensitive and irritable condition. This irritable state produces a congestion of the prostate. This is true of other parts of the body. Irritate the nerve which supplies the eyeball with an electric current, and at once the sclerotic becomes congested. This congestion of the prostate reacts upon the spinal cells, increasing their irritability, as the induction in the core does on the primary coil from which it receives its first impulse. The increased impulse given the primary by this reaction causes it to react with greater force of induction on the core, which again, with increased force, reacts back upon the primary, and so on. Such is the case with this disease—one reacting upon the other until the action of the cells is destroyed, and we get a paralysis. When this occurs, the irritable state of the cells disappears, just as if the primary circuit was shut off, and, consequently, the congestion of the prostate disappears, just as the current in the core would. Also, just as the core of a battery forms the lines of force of the coil, so does the congested prostate direct the irritable action of the cells upon itself and back again upon the cells, and, as the current in the coil is greatly impaired on account of this loss of direction of force when the core is removed, just so is the irritability in the nerve

cells reduced by the removal of the prostatic congestion.

In order, then, to produce impotence, there must be brought about, first, that condition which weakens the nerve cells that preside over the sexual functions, and the different causes which lead up to it will be enumerated in the following section.

Ætiology.—As every man should have the power to perform the sexual act, unless senile decay or an organic defect preclude it, and, as many lose this power in the prime of life, we should study the causes under which this loss takes place, and also the conditions by which it is maintained. As I have contended in the pathology that the seat of the trouble is primarily in the nervous system, what I have to say under this heading will serve to show how and by what process the nervous system is so disarranged. We may properly divide the ætiology into three classifications: First, physical causes; second, acquired; and, third, exciting or immediate causes. It is of the two first that I speak in this section, the third having been given in the symptomatology.

Of the first, or physical causes, we must take into consideration the general and sexual vigor of the patient. It must be admitted, when in a perfectly normal state, all the functions of the body must necessarily be equally strong; but there are many men who are apparently perfectly healthy, yet suffer more or less with weakness of certain functions.

As I pointed out under spermatorrhea, a strong man may have weak eyes, and a man strong in other functions of his body may be very weak sexually.

This functional weakness is not necessarily the result of masturbation or other excesses; it may be either congenital or acquired other than by these causes. That a parent can transmit a neurasthenic temperament to a child is so well understood that it need not be considered here, and just as true is the fact that a child may be started in life with sexual neurasthenia due to prenatal causes. I believe anyone who has taken the trouble to investigate the subject has found that younger boys of large families do not have the same sexual vigor as the older ones.

Neurasthenia, either inherited or acquired, need not necessarily be of a general type. It may attack, as Dr. George M. Beard * has pointed out, various parts and functions of the body, such as the brain, spinal cord, digestion, or the sexual system. We may, therefore, have a man physically and mentally strong, and yet sexually weak. This explains why so many men in the prime of life become impotent from slight causes. Sexual excess, or abnormal practices of any kind, affects the whole nervous system more in a general neurasthenic than it does in one who is not. While such patients are naturally

* "Sexual Neurasthenia."

predisposed to impotence, yet, in practice, we often find a chronic neurasthenic retaining sexual power beyond the age of a strong, robust man. Dr. Beard's explanation is, that the sexual system has no power of resistance in a general neurasthenic, and allows the bad effects to be spread throughout the whole body, while the strong man's sexual system has great resistance, and thus takes the brunt of the excess. The more rational explanation is, however, that the bad general effects from excess warns the neurasthenic and causes him to desist, while the strong man, with no such warning, continues until his sexual system suddenly breaks down.

Masturbation.—This undoubtedly takes the lead of all the acquired causes of impotence. The term masturbation signifies the production of a sexual orgasm by friction of the hand, but I shall include under this heading all forms of self-abuse by friction, no matter how it may be brought about. The statement that all boys at some period of their lives masturbate, is, I believe, overdrawn; but of the majority, it is undoubtedly correct. The age at which the habit is formed varies, and the effect on the genital system varies with the age when masturbation is practiced. If a boy begins before puberty, say at nine or ten years of age, and practices the habit to excess, the genitals will be undersized; while, if the habit is begun later in life, after the organs have developed, this does not occur, and the

injurious effects are not so bad, for the mature body is more capable of withstanding the abuse than are the immature organs.

Masturbation is not confined to youth alone. I have seen two cases who have practiced it as late in life as thirty-eight and forty-five years respectively. In these cases, however, it is not generally carried to excess, but is practiced to relieve an otherwise continent man, and hence does but little harm.

Authors differ regarding the bad results of masturbation—some minimizing it, claiming it does not materially endanger the general or sexual system, while others attribute to it the most direful results. We know, when masturbation is carried to excess in the young boy, it produces idiocy, and, in many cases, undoubtedly weakens the system so that epilepsy and other neurotic diseases make an easy prey of the victim.

Infrequent masturbation after the age of sixteen or seventeen probably does not do much harm to a strong, healthy boy, so far as the sexual system is concerned; but it takes away the manliness of the boy. It creates a nervous restlessness by its reflex action on the nervous system. This restlessness is not only physical, but mental, and the boy will find great difficulty in concentrating his mind on his studies. Masturbation undoubtedly weakens the cells which preside over the sexual

functions, as evidenced by the fact that spermatorrhea so often follows its discontinuance. This weakness is of an irritable type, and is first manifested by irritable erections, which the boy cannot control, and, if the habit continues, advances to spermatorrhea and irritable impotence.

I have already discussed the point as to the cause of the bad effects of masturbation,—whether it is due to a loss of the highly vitalized seminal fluid, or to the effect of the orgasm upon the nervous system,—under spermatorrhea, and therefore will not repeat it here.

In the majority of cases of masturbation, the boy discovers in some way that the habit is bad before he has gone so far that he has apparently done permanent injury, and discontinues it, marries in after years, and is apparently sexually strong. However, the cause of those cases of impotence which occur in men from thirty-five to forty years of age who have lived a quiet, domestic life, not indulging in excesses or sensuality, is due to masturbation in their youth, which has weakened the immature sexual system, shortened its life, and has thus caused a premature decay.

Therefore, if a physician is called upon to prescribe the sexual hygiene for a young man, the question whether he has ever masturbated should be taken into consideration, and he should be cautioned and advised accordingly.

Sexual Excesses.—Moderate normal exercise of the sexual organs is undoubtedly conducive to health and longevity of the function itself. Few married men practice sexual excess, but some doubtless do. A man who loves his wife has too much respect for her feelings and, also, for himself, to become a brute, unless urged on by a wish to satisfy an ever present desire of his better half. When such a man becomes impotent, he may suffer first from the irritable form; but he generally loses power gradually and finally develops the paralytic type.

The excesses of unmarried men are generally periodical, when a great strain is put upon the sexual organs for a short period, after which they have an opportunity to rest. It is not the amount of sexual intercourse that produces the mischief in this class of cases, but it is the bad sexual hygiene and the sensuality of the man which keeps his nervous system at all times, more or less, in an excited state.

Abnormal Sexual Intercourse.—I do not intend to give a description of sexual perversions described by Kraft Ebing, which belong to the department of mental disorders rather than to the class of diseases of which this book treats, but to give a few of the abnormal sexual indulgences practiced by men without the knowledge that they are doing anything which is working injury to themselves.

Sexual Continence.—This vicious habit first came into prominence by the exposure of the Oneida Community—a colony of people located, about twenty years ago, in the central part of the State of New York. The abnormal practice they indulged in they termed *sexual continence.* It consisted in a man, when having sexual intercourse, allowing things to take their natural course until he reached a certain stage of sexual excitement, at which point he holds himself, never completing the orgasm.

The reasons which J. H. Noyes, the head of this organization, gave, when the perniciousness of the habit was pointed out to him, are certainly very novel, and we quote his own words:

"It is seriously believed," says he, "by many that nature requires a periodical and somewhat frequent discharge of the seed, and that the retention of it is liable to be injurious. Even if this were true, it would be no argument against male continence, but rather an argument in favor of masturbation; for it is obvious that before marriage men have no lawful method of discharge but masturbation, and, after marriage, it is as foolish and cruel to expend one's seed on a wife, merely for the sake of getting rid of it, as it would be to fire a gun at one's best friend merely for the sake of unloading it." *

* Dr. Eli Van de Warker, *American Journal of Obstetrics*, vol. xvii. p. 778.

The above remarks by Mr. Noyes come far from bearing upon the real point of the case. It is not the retention of semen that does the harm, but the long continued state of excitement followed by exhaustion. Normal sexual intercourse consists in a gradual excitement of the sexual system until it reaches a certain tension, when it is relieved by an orgasm and returns to rest. But in the so-called sexual continence the nervous tension is prolonged sometimes for hours, and then not relieved with an orgasm, but is left to subside by exhaustion of the nerve cells. In order to practice it it requires a certain amount of education and self-control on the part of the man, and, unfortunately, many have both.

Sexual continence is practiced by some to prevent pregnancy, by others to indulge a particularly amorous partner who requires many orgasms on her part before being satisfied, and still others for the greater amount of pleasure they derive from the long continuance of the act. Undoubtedly some think they are doing themselves less injury than when they have the orgasm, as many look upon the loss of semen as draining their strength, and that the harm of sexual excess only is in proportion to the amount of semen lost.

Premature Withdrawal.—Another form of abnormal sexual intercourse is premature withdrawal—an act practiced solely for the purpose of preventing

pregnancy. This is doubtless the most common cause of impotence in married men. The orgasm is the result of reflex action produced by friction on the glans penis, or, in other words, the friction furnishes the stimulus for the orgasm. Now, in the midst of the orgasm, the penis is withdrawn, the stimulus is suddenly cut off, and the nerve centers have to complete the orgasm without it, and, consequently, a great strain is thrown upon them.

I might go on adding to the various kinds of abnormal sexual intercourse, but these two will suffice, as they are the ones most commonly met with.

Fondling of Women.—This might be termed a psychosis; but, as it is not uncommonly met with as a factor in producing impotence, I shall give a short description.

There are men who derive more pleasure from fondling a woman than from having sexual intercourse. There are others who, from fear of catching disease, or from lack of opportunity to complete the sexual act, or, perhaps, from extreme modesty on their part, fondle women until their whole sexual system is kept in a state of almost constant excitement. This may be carried on in good society by persons of equal rank who would not think of going further. It is often the case with engaged couples, allowed to be alone hours at a time; and yet they may be innocent of the real nature of the act or its consequences. This is undoubtedly a

common cause of irritable impotence, characterized solely by premature ejaculations, in bridegrooms. Such a state of affairs keeps an uncurbed sexual desire under constant excitement, not only during the time they are together, but it creates amorous thoughts, which are more or less constant with the man, keeping the sexual system in a continual state of excitement and, consequently, exhaustion.

Gonorrhea.—Gonorrhea is an important disease as an exciting cause of irritable impotence. It is natural that it should be so, for a high state of inflammation in parts so directly connected with the nerve centers must necessarily produce great effect on them. If the nerve centers of the sexual system are unimpaired by other causes, the gonorrhea will probably have no effect on the potency; or, if it should, it will only be of short duration, with a spontaneous cure soon after the gonorrhea has disappeared. But if, on the other hand, the nerve centers are impaired at the time the gonorrhea is contracted, more severe and lasting will be the impotence.

Symptomatic impotence may be produced by almost any disease which acts directly or by reflex action upon the nerve centers, destroying their action. The impotence produced in this way is generally characterized by gradual loss of erection until there is total disability. Seldom, but occasionally, there are present symptoms which characterize irritable impotence.

The long-continued use of any strong cerebro-spinal stimulant may produce impotence within itself, but it is more liable to act as a participating cause in weakening the nerve centers which make them an easy prey to excesses of any kind. Chronic álcoholics, as well as opium eaters, are very apt to be impotent. The inveterate use of tobacco undoubtedly weakens the sexual powers. These stimulants act first as a tonic to the sexual organs, and thus, by the continuous use of the stimulant, the organs are kept in a continual state of excitability. Finally, a reaction comes, as it always does when any part of the cerebro-spinal system is overexcited.

The cause of organic impotence will be so apparent that it need not be illustrated here.

Diagnosis.—There is little more to be said regarding the diagnosis than has been given under the description of the disease, but a few remarks may be added upon the most important points.

It requires no particular description to distinguish organic impotence, as it is at once apparent; but one should be careful to distinguish between atonic impotence, either irritable or paralytic, and psychical or symptomatic impotence, as they require quite a different form of treatment. The history of the case will assist much in making a diagnosis.

A case of psychical impotence occurs in the young and amorous, and will present a history of the man being apparently perfectly potent, perhaps

even troubled with too vigorous erections, until he undertakes sexual intercourse and fails. The whole nervous and apprehensive condition of the man will help complete the diagnosis. The danger, however, is in confounding the irritable form of atonic impotence, characterized by premature ejaculations, with psychical impotence.

Symptomatic impotence makes its appearance with the condition, or conditions, which is the primary cause; but a man suffering from diabetes, for instance, which has impotence as a symptom, may present himself for the impotence, not knowing that he has diabetes. It is, therefore, always essential to make a careful examination of the general condition and habits of the patient, in order to determine if either might be the cause of the impotence.

A case of true atonic impotence cannot easily be mistaken. If it occurs in the young, there will be a history of self-abuse or excesses of some kind. It comes on gradually after long abnormal practices, or from excess of normal practices, and consists of premature ejaculations accompanied with loss of a certain amount of erectile power, which gradually increases in severity.

Prognosis.—The prognosis depends upon, first, the kind of impotence present; second, the cause; third, the manner in which it has made its appearance, and fourth, the age and general condition of the individual.

With the irritable form of atonic impotence the prognosis, as a rule, is good, and is made even better when it occurs under thirty-five or forty years of age; when there is no history of excessive masturbation in youth, excesses in sexual intercourse, or the abnormal practices alluded to under ætiology; when the organs retain their normal appearance and the semen under the microscope is normal in character, and the spermatozoa in size and shape. It is, also, more favorable when the patient is in a position in life to take the required rest from care and labor, and follow out the hygiene prescribed; and when there is a good general physical condition to start with. On the other hand, if the patient is beyond the age of forty; if he has been addicted to the constant use of spirits, or the inveterate use of tobacco; if he has carried on abnormal practices and is broken in health, the prognosis is bad.

With paralytic impotence the prognosis is always grave. If the circumstances surrounding the case are good, and no change has taken place in the organs themselves, some hope may be held out; but if atrophy of the organs has occurred there is positively no hope of recovery.

Symptomatic impotence depends largely on the disease of which it is a symptom; but not entirely so, for, with many cases, the impotence remains after the disease is cured. Of course, in organic diseases of the central nervous system, of which

impotence is one of the manifestations, the prognosis is bad; but in those cases which produce the impotence by reflex action, in making the prognosis one should take into consideration the probable sexual vigor before the disease which caused the impotence made its appearance. If the sexual system was in a normal, vigorous condition prior to the invasion of the immediate cause, the prognosis is good, providing the disease causing it is curable; but, if the organs had become enfeebled before, and were on the verge of collapse, only requiring a little additional depression, the prognosis is bad.

The prognosis of organic impotence depends entirely upon the ability of the surgeon to reduce the deformity which produces it.

Treatment.—When a man presents himself for treatment, complaining of impotence, the physician should make the most careful examination of his general condition, particularly of his nervous system. He should examine the kidneys and other organs of the body to discover if there is any cause existing, outside the sexual system, for the impotence. Above all, the habits, both general and sexual, should be inquired into, with special reference to the relationship between the man and his wife, if he is married, or, if not, the circumstances surrounding his sexual relations with other women.

The physician who takes all these points into consideration, and bases his treatment upon the same

broad plan, will be greeted with success more frequently than he who only takes into consideration the local condition to guide him in his treatment.

In many of the cases there will be a history of emissions. This is particularly true of irritable impotence when occurring in the young. When emissions are present, the physician should first put forth all his energies to stop them, no matter if they are of infrequent occurrence, for they are certainly not the result of undue sexual vigor, but are caused by irritable weakness. In all these cases the mental condition has much to do with the cure, and with such a depressing effect as these emissions have, it would be impossible, in many cases, to bring about that healthy mental state which is so much desired, so long as the emissions continue. But this is only a minor reason why they should be stopped, for every one that occurs adds to the irritable, depressed state of the sexual system, and will undo all the good the treatment can be expected to accomplish.

It is unnecessary to here give the treatment needed for this purpose, as it would be repeating what is given under spermatorrhea. I therefore refer the reader to that section.

Hygienic and General Management.—First of all, the physician should quiet the nervous fears of the patient by plain statements and assurances. Sometimes it is necessary to use much tact in these

assurances, for the patient is liable to be very skeptical.

It is most important in all cases of atonic impotence that the patient have absolute rest of the sexual organs. It is not enough that he has rest from sexual intercourse, for often the irritable erections, produced by impure thoughts and relationship, are worse than a normal coitus. If he is married, and occupying the bed with his wife excites his passion, he should have a separate bed, and, if necessary, a separate room. If his wife is an amorous creature and annoys him, it is better for the physician to see the wife, if the husband cannot make her understand, and talk plainly with her, pointing out the harm she is doing. There may be cases in which the husband will not voluntarily follow the doctor's advice. In such a case it is well to let the wife know the exact state of affairs, and she will generally oblige him to follow the directions.

If the patient is unmarried, but is accustomed to visit houses of prostitution, or to be thrown in contact with women who excite his passions, he should at once break off all such associations and not allow himself to be drawn into company that is likely to excite his sexual desires. The same is true with the literature he reads. It should be well selected, of a substantial kind, avoiding all licentious books and all popular novels which appeal to the sensual rather than the moral senses. Exciting books, such

as detective stories that tend to excite the nervous system, should also be avoided. Neither should the books selected be too deep or profound in character, as this would draw too much on the nervous resources. A light, entertaining history is a good selection. If the patient has a hobby for any special line of literature that is not objectionable, let him follow his inclination, as it would be more likely to take his attention from the sexual organs. The same may be said of any of the arts, sciences, or mechanics. Medical literature dealing with sexual neuroses should be avoided, and, above all, quack books of this kind must be kept away from him. He should cultivate pure thoughts and occupy his time by reading and other pastimes which tend to divert his mind into other channels.

When a man suffering from irritable impotence is put under this quiet, restful influence the irritable erections disappear in the course of a week or two. This is a most desirable result to attain, as it is not until this stage is reached that there is perfect rest of the organs. But, desirable as it may be, it is liable to produce consternation in the mind of the patient. He fails to see the same good results that you do, until it is explained to him that the irritable state of the nerve cells has passed away and they are free from the trouble that was exhausting them, are now storing up strength, and, after a few weeks of perfect rest, erections will again occur with more

vigor than ever. It is a better plan to inform the patient when first beginning treatment that such is to be the result. He will then be prepared for it, and will also have more confidence in the physician.

After a patient has improved to such a degree that erections have returned and all irritability and congestion have passed away, if the man is married sexual intercourse may be allowed, but always under the direction of the physician, who should hold it in check; for, if the case is well advanced to a cure, sexual intercourse will stimulate the organs, and there is liability to overindulgence. It should not be allowed, so long as the patient is in condition to require treatment, oftener than once in a fortnight, or even longer. Never advise illegitimate intercourse, for the chances are that it will undo all the good that a long and conscientious treatment has accomplished.

Some directions regarding the course to pursue when beginning sexual intercourse will be of advantage to the patient, particularly if he has been suffering from irritable impotence. In making an intromission the penis should penetrate the vagina completely, so as to bring the glans as far as possible from the sphincter, for the contraction of these muscles on the glans facilitates greatly the production of the orgasm. This position also brings the pubis against the clitoris, and by making slight motions sidewise there is produced friction on the

clitoris, while the glans is comparatively free, resting in the posterior vaginal cul-du-sac. When the female has reached a certain stage of excitement perpendicular movements may be made. The man at once discovers that he has the power to continue the sexual congress almost *ad libitum*, and at once gains a degree of confidence which in itself is half the treatment in irritable impotence, and is all of it in psychical impotence. The man, however, should be warned against the perniciousness of continuing the sexual act too long.

There are two classes of cases in which this advice is indispensable. First, for instance, the husband may be of a nervous, excitable temperament, and the wife of a leucophlegmatic temperament. In such a case the husband would naturally reach the stage of excitement and have the orgasm sooner than the wife. Second, the husband has to reach a certain stage of excitement before he can begin the sexual act, for he has to have an erection, which in itself denotes a certain stage of the sexual act. He makes advances to his wife, who perhaps has not been thinking of it, and, consequently, has not the least desire, but receives his advances. Slowly the clitoris becomes erect, but it takes some seconds, or perhaps a minute or two, for her to reach the same stage of excitement that the husband had when the act was begun. If the husband progresses to the orgasm with the same degree of rapidity that the

wife does, he reaches the climax sooner than she. Both of the above types of cases have the semblance of irritable impotence, yet there is no disease present, the cause being simply in the circumstances surrounding the case. The advice given above will remove all difficulty and relieve the great anxiety of the husband.

In dismissing the patient as cured, he should be cautioned against overindulgence, with the warning that a relapse is liable to occur. An idea of the frequency of intercourse may be hinted to him, and this should be based upon a knowledge of the probable endurance of the patient, the occupation he follows, whether it is one in which he exhausts his general nervous forces or whether it is otherwise, and upon the severity of the attack of impotence he has just recovered from.

When there is an entire lack of desire for sexual intercourse, and there is no local irritation or congestion to contra-indicate it, it is quite necessary that a healthy desire be established. The best way to accomplish this is to manage the patient so that, without his knowledge of your designs, he is brought in contact with female society which is particularly agreeable to him. It is very desirable that he avoids the society of lewd, vulgar women, as it will be sure to disgust him.

The stomach should be gotten in good condition, if it is out of order, and the bowels regulated by

proper treatment. The diet should be full and plain. The patient generally needs nourishing tonics. Iron, cod-liver oil, maltine, etc., may be given. It is best to avoid stimulants. Alcoholic beverages and the use of tobacco should be discontinued, unless the patient is accustomed to their immoderate use, making it undesirable to entirely discontinue them, when their use should be restricted.

The exercise should be regulated as best suits the patient. If confined by a sedentary life he should be advised to take exercise in the open air. Care is to be taken, however, not to overdo. The motto: "Be moderate in all things," should be strictly adhered to. What is said regarding exercise and use of the bicycle in spermatorrhea is applicable to impotence.

It will require all the skill and tact of the physician to manage cases of psychical impotence. Occasionally where a man is suffering with it, when told the exact condition, and when he understands by the careful explanation of the physician how such a state of affairs is brought about, he may take a philosophical view of it, and, consequently, will be cured of his impotence. Such men, however, are rare, and it is better not to undertake such a course at first, but wait until he has become better acquainted and you have gained his confidence, before opening up to him his real condition.

Better is it to assume, so far as the patient is concerned, that he is suffering from real impotence; but assure him you know the cause, and it can be easily remedied. Do not be too extravagant in promises, for the very nature of the mental condition is such that he is skeptical of everything; but be firm in your assurance. A little indecision or doubt on your part would have a most disastrous effect upon the mind of the patient. Institute a plan of treatment which will tend to inspire confidence. Prohibit intercourse, and warn the patient against any attempt on his part to produce an erection; but, on the other hand, to try, by mental repression, to keep down all erections. By this advice you immediately remove the state of siege the mind has on the sexual organs, and the result will generally be that within twenty-four or forty-eight hours the patient will have firm, perhaps violent, erections, and the more he tries to repress them the more they will be liable to occur. If he is a married man, the chances are that he will attempt intercourse against your advice, and will be made happy by the success attending it. If he is not a married man and has been testing his powers before marriage, after erections have returned the physician should explain to him how different is cohabiting in the marriage state from illegitimate intercourse, assuring him that he will have no trouble after marriage. When this assurance is

backed by a return of vigorous erections, it is all-powerful, and confidence is at once restored. It is well to advise these cases not to consummate the marriage vows the first night. Under such advice the fear of failure on that night will be removed, and, consequently, erections and sexual intercourse will be very liable to take place.

I know of a case of psychical impotence occurring in a young man, due to failure on attempting intercourse with a prostitute, that was cured by his going to bed with another prostitute with the express understanding he was only going to sleep with her. The result was he had not been in bed an hour before he had accomplished the act, and never had difficulty afterward. This was done on the advice of his physician. I have, however, yet to see a case where it was necessary to advise a man to commit an adultery to be cured.

What has already been said regarding literature is particularly applicable to psychical impotence. The old school give a placebo in psychical impotence; but the very fact that there is a psychical condition present furnishes indications for the homeopathic remedy, which may be of great value.

In those cases of relative impotence where a man has lost all desire to cohabit with his wife, it is useless to attempt anything until there is brought about a different relationship from the one existing between man and wife.

When psychical impotence is due to nervous fear, the patient should be put on a general treatment to improve his nervous tone.

In those cases of symptomatic impotence due to continuous drug action, the medicine should at once be discontinued; or, if a symptom of some diseased condition that is curable, the disease should first be cured, and, if sexual vigor does not return, the impotence should be treated according to the principle laid down, as the nature of the impotence may indicate.

Active Treatment.—The initial local treatment of irritable impotence does not materially differ from the irritable stage of spermatorrhea. The first indication is to remove all sources of irritation. If there is a tight foreskin or an irritable rectum, they should receive the appropriate surgical treatment. Next the urethra should be carefully examined. If strictures are found, they should be treated either by cutting, dilatation, or electrolysis. Next, the most important of all the treatment, the removal of the deep urethral sensitiveness. As the treatment for this has been fully described under spermatorrhea, page 43, I refer the reader to that article for more complete description and the theoretical consideration. It is accomplished by introducing steel sounds to which is attached the negative pole of the galvanic battery.

All the local treatment at first should have a ten-

dency, in irritable impotence, to remove the irritability, no matter how it is manifest or where it may be found. If there are perineal spasms at night, a warm sitz bath, from 100° to 105° in temperature, should be taken just before retiring, or twice a day, morning and night, if necessary. This will be very efficient in soothing the irritable state of the perineum and rectum—cold sitz baths being contra-indicated at this stage. If the patient has not facilities for hip bathing, he may bathe the loins, groins, and genitals with hot water of about 105° and apply a sponge saturated in hot water to the perineum.

After the deep urethral sensitiveness has disappeared, and all other local irritability passed away, there should be given a tonic treatment of the sexual organs, and from this point on the management of irritable and paralytic impotence does not differ.

Hydrotherapy is not to be neglected. Its tonic effect on both the general and sexual system is so well known that it requires no elucidation here.

The temperature of the water should be carefully looked after. Some neurasthenic patients—and many cases of impotence suffer from neurasthenia—are made worse by the use of too cold water for bathing. The temperature should be such that, after the first shock, the water does not feel particularly cold, and, after the patient is dried, he feels throughout his whole body a glow of warmth.

Under no circumstances should the chilliness continue after the patient is wiped dry. If he is not accustomed to cold bathing, it will be well to begin with a temperature of 85° and gradually lower it until the desired degree is reached. The best time to take a cold bath is in the morning on rising.

If a patient has a bathroom so arranged that a hose can be attached and both hot and cold water can be turned through it, thus making it possible to temper the water to any degree, it is best to take the bath in this way—the hose having a rose nozzle, the patient taking it in the form of a needle spray. The lower part of the abdomen, the groins, and genitals should receive the water a little colder than the rest of the body. If he has no such arrangement, he should provide himself with a very large sponge, and, after stepping into the bath, bring the sponge well soaked up to the neck and allow the water to run down over the front and back, particularly the whole length of the spine. In order that the genitals may get the full tonic effect of the water, the sponge should be brought, well soaked, upon the abdomen and a volume of water allowed to run down over it, then down the groins, the testicles being brought forward by the other hand. This allows the water to run in voluminous streams over the genital organs, and is more efficacious than simply dashing cold water on different parts of the body.

In the beginning, a cold water bath should not last longer than one-half to three-quarters of a minute, and it should never continue for more than from one to one and one-half minute, particularly if the patient is at all neurasthenic. Russian or Turkish baths may be taken occasionally, but should not be indulged in too frequently—not oftener than once in ten days or two weeks.

The glans and integument of the penis should be examined for anæsthesia, which will be fre-

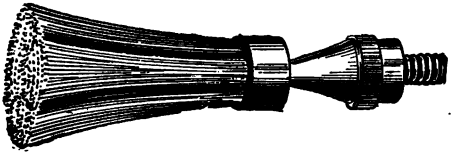

FIG. 6.

quently found in advanced stages of impotence. This loss of peripheral sensitiveness is particularly noticeable to the electric current, either galvanic or faradic. If found to exist in a mild form, simply rubbing the penis vigorously with an ordinary sponge electrode attached to one pole of a faradic battery, while the other electrode is placed over the lumbar region, will suffice. If the anæsthesia is more severe, the wire brush electrode, given in Fig. 6, should be used in the same manner as the sponge, passing as strong a current as the patient can bear,

which, of course, will depend upon the degree of the anæsthesia.

In those cases of paralytic impotence where the meatus is pale, which is an indication of the anæmic condition of the deep urethra; or in cases of the irritable type, after all sensitiveness has passed away and erections show no signs of returning, electrical treatment of the urethra will be of benefit.

The faradic current with the medium coil, No. 32 wire, should be selected. One cord is attached to a flat hand electrode and placed well up against the perineum, the other is attached to a full-sized steel sound which is inserted into the deep urethra. Some object to the urethral application of electricity, claiming there is danger of setting up an urethritis; but I can assure them that, if the operator is at all skilled in the use of the steel sound and follows the directions given below, there will not be the slightest danger of urethritis following the treatment.

First. Use all the precautions in introducing the sound that would be required in the most sensitive urethra.

Second. Never use the current stronger than to produce a slight sensation underneath the perineal electrode. It is unsafe to be guided by the sensations produced by the urethral electrode, for in many cases of paralytic impotence there is usually a loss of sensitiveness of the urethra to the faradic

current, and, consequently, the sensation produced here is unreliable as a guide to the strength of current. When there is no loss of urethral sensitiveness there will be a slight burning alongside the electrode.

Third. The duration of the first treatment is not to exceed one-half minute, or even less, and is never to be extended longer than three or four minutes.

Fourth. When beginning, the treatment should not be given oftener than every third day; but may, if the patient bears it well, later be given every day.

The general electrical treatment is very important.

First. Give a descending current along the spine (positive pole at nape of neck and negative on coccyx) of fifteen milliampères for four minutes; then the negative pole is placed over the lumbar spine, and the positive pressed firmly against the under surface of the testicles and penis. Large-sized electrodes should be used, and a current of ten milliampères given for four or five minutes longer. It may be well to alternate the current a few times by means of the pole changer. Sometimes the faradic has better effect when applied to the penis and testicles than the galvanic, but the best result will be attained by using the galvano-faradic, attaching the positive pole of the galvanic to the negative pole of the faradic. The poles should be placed, so far as polarity is concerned, the same as given above for the galvanic.

The whole electrical treatment for the anæsthesia, the urethra, and the general treatment may be given at one sitting, the séance lasting for twelve or fifteen minutes.

Medical Treatment.—According to my experience, there is more harm than benefit arising from medical treatment as administered by a large majority of physicians. A young man presents himself to a physician, describing a case of irritable impotence. The chances are that the physician will prescribe phosphoric acid or some of its class of remedies. In irritable impotence phosphorus, phosphoric acid, and the phosphates, cantharis, damiana, phosphate of zinc, and cicuta virosa are contra-indicated. In this stage we should try to quiet an irritable state of the whole genital system, decrease its irritable activity instead of stimulating it, so that it may gain strength by rest. It is in this stage that ignatia may be of inestimable value. Here it is that we must prescribe for the general nervous system, and not for the local symptoms. It is at this time that the old school gives the bromides and mono-bromide of camphor in massive doses. Regarding this treatment I would say that I have never seen a case where I thought it was necessary to give these drugs, and, in the second place, the drugs work great injury to a neurasthenic system, in which condition many of the cases are, and they thereby retard the ultimate recovery.

After the irritable stage has passed away and it becomes necessary to give tonic treatment, or in paralytic impotence, phosphoric acid, damiana, etc., are of use. It may be well, if the patient is anæmic, to give iron in some form. The phosphates, liquid malt, etc., may be added in many cases where there is need of a general tonic treatment. Phosphoric acid is generally given in the form of some of the phosphates; damiana is given in doses of from two to three drams every eight hours. I have not satisfied myself of the properties of this drug, but I think it uncertain in its action. Another remedy, the officinal pill of nux vom., phos., and cantharis, is an excellent one in this stage.

Let me urge upon the physician in selecting the homeopathic remedy that he be guided just as much by the stomach symptoms, by the state of the bowels, and by the general nervous condition, as he is by the local manifestations of the impotence, and I am sure he will not fail to see the results of the remedy.

In compiling the symptoms of the following remedies, I have tried to select the local symptoms only that apply to impotence, as it would be impossible to compile symptoms that would cover all the various symptoms which might be an accompaniment, unless nearly the whole materia medica was reproduced.

SPECIAL THERAPEUTICS FOR IMPOTENCE.

Agaricus mus.—Great desire for an embrace, the penis being relaxed during coition. Burning in urethra; most painful with the ejaculation. Ejaculation insufficient, or very late. After emission, pain and weakness in the thighs. After coition, loss of appetite; lassitude for several days; night sweats. Complaints after sexual debauch; emissions frequent or continual at night.

Note.—Particularly indicated when there is excessive desire, with relaxed penis, and for after effects of masturbation, if the boy has choreic symptoms, or from the bad effects of sexual excess, when accompanied with great weakness and nervous symptoms, jumping of the muscles, etc.

Agnus castus.—Sexual desire lessened—almost lost. Testicles cold, hard, swollen, and painful; penis shrunken and flaccid. Impotence, with gleet; especially in those who have had gonorrhea. Gleet, with want of sexual desire and erection. Absence of erection and desire. Urethral discharge yellowish.

Note.—Particularly indicated in paralytic impotence, or in those bordering on it, when there is both loss of desire and erection, with coldness of the genital organs, and when accompanied with gleet, or when the impotence is the result of an attack of gonorrhea.

Argentum nit.—Want of desire; organs shriveled. Coition painful; urethra as if put on the stretch. Erections, but they fail when coition is attempted.

Note.—Want of desire; shrinking of the organs. The chief symptom of this remedy points directly to paralytic impotence. The general concomitant characteristics, such as emaciation, trembling, weakness, and debility, mostly in the legs, etc., should be present when it is prescribed.

Berberis.—Suppressed sexual desires. During coition, too weak and too short thrills; ejaculation too soon. Neuralgia of testes and cords; parts swollen and tender. Pains in genitals increased by motion. Scrotum shrunken, cold, with pressure in testicles.

Note.—Have seen excellent results from this remedy in impotence when the genitals are very irritable, and are subject to shifting neuralgic pains that seem to center in the testicles, which are sore and sensitive to pressure.

Cannabis sativa.—Impotence from sexual abuse. Coldness of organs, with warmth of the rest of the body. Penis swollen, without marked erections. Frequent erections, then stitches in urethra. Dragging in testicles when standing.

Capsicum.—Impotence; scrotum cold, shriveled. Cramp-like pains in testicles after emission. Loss of sensibility in testicles, softening and dwindling.

not noticed until reduced to the size of a bean. Testicles drawn up close to abdominal ring, and suspended by a shriveled spermatic cord.

Note.—Indicated in paralytic impotence when there is a tendency to atrophy of the testicles and spermatic cord.

Carbonicum sulph.—Sexual organs relaxed. Shriveled penis. Erections with nightly emissions. shrunken and painful scrotum. Testicles small, with diminished sensation on pressure. Impotence, with atrophy of the testicles.

China. Note.—Used for impotence, the result of debility from sexual excesses or spermatorrhea (which see).

Gelsemium. Note.—Irritable impotence, when accompanied by advanced spermatorrhea (which see).

Ignatia.—Sexual desire weakened. Erections during stool. Contraction of penis—it becomes quite small. Desire lost. Impotence, with lasciviousness; irresistible desire for an embrace, with relaxed penis. Profuse emission at night.

Note.—This is one of the most important remedies we have for psychical impotence, for impotence due to grief, and, also, for irritable impotence, when the general nervous condition calls for it. It is particularly useful in perineal spasms.

Lycopodium.—Impotence; penis small, relaxed; also, from poisoning with chlorine; after onanism. Erections feeble; during an embrace, falls asleep.

Excessive and exhausting pollutions. Penis small, cold, and without erections.

Note.—Impotence, with loss of desire; also, impotence of old age: "The old man's balm."—*Lillienthal.*

Nux vomica.—Bad effects from sexual excess. Easily excited desire; often excitable, but power is weak. During an embrace the penis becomes relaxed. Emissions during sleep, especially after onanism or from too high living.

Note.—This remedy is particularly useful for the bad effects of sexual excesses, and for that form of impotence where, from sexual excesses, there has developed an irritable condition, in which irritable erections may take place, but they are not under control of the mind and are liable to subside any time, even during an embrace.

Phosphorus.—Sexual excitement, frequent erections and emissions, or irresistible desire for coition. Lascivious; strips himself; sexual mania. Impotence after excessive excitement and onanism. Desire extreme; with feeble erections; afterward disappears and erectile power left. Seminal emissions caused by exuberance and nervous excitement, followed by impotence.

Note.—Indicated in impotence which follows excessive sexual desire.

Phosphoric acid.—Erections without sexual desire, morning when standing. During coition,

sudden relaxation of penis preventing emission. Weakness after coition or pollutions. Frequent and debilitating emissions from weakness of the parts, with onanism and very little sexual excitement. Onanism, when the patient is distressed by the culpability of his indulgence.

Note.—For impotence when accompanied with spermatorrhea, and when every attempt at intercourse, or an emission, is followed by great exhaustion. Sexual neurasthenia. Sudden relaxation of the penis during coitus is due to exhaustion more than to the spasmodic nervous action, as in nux vomica. Not to be used in irritable impotence.

Picric acid. Note.—For symptomatology, see spermatorrhea. I have never seen any benefit from this remedy in impotence, as the erection it produces is not healthy, but rather the result of nervous stimulation, which quickly subsides, leaving the impotence worse than before the remedy was administered.

Platina.—Sexual desire excessive, with violent erections, especially at night. Embrace with but little pleasurable excitement. Morbid excitement inducing onanism, especially if prepubic.

Note.—This drug is to be used in the morbid sexual excitement which belongs to psychical, instead of nervous impotence.

Psorinum.—Impotence; want of emission during coition. Aversion to coitus. Drawing in testicles and cord. Male parts flabby, torpid.

Sulphur.—Involuntary discharge of semen; too quick discharge of semen during coitus. Waning of sexual desire from overindulgence, weakness of back and threatening paralysis. Coldness of penis; testicles relaxed, hanging down.

Note.—Is often an excellent intercurrent remedy for impotence.

Zinc oxide. Note.—Indicated in impotence and spermatorrhea, when the general characteristics are present, such as general hypochondriasis, when the patient cannot keep still; must be in motion all the time, etc.

In addition to the above the following remedies may be indicated: anacardium, antimonium crud., aurum met., belladonna, bovista, bufo, caladium, camphor, cannabis indica, cantharis, carbolic acid, cedron, conium, graphites, hamamelis, hepar, kali bich., kali brom., kali iod., magnesia carb., nux mosch., pulsatilla, rhus tox., selenium, sepia, and silica.

STERILITY.

Man, from the age of puberty to that of decline, should have the power of reproducing his species. When, however, he loses this power, no matter from what cause, he becomes sterile.

Sterility and impotence should not become confused. When a man is impotent he may be sterile, from the fact that he is incapable of depositing the semen in the vagina, owing to a lack of power of erection and penetration; but yet he may be capable of generating semen endowed with all the fecundating properties. As a rule, a sterile man is not necessarily impotent, but is capable of performing coitus in a normal manner, even to the depositing of semen in the vagina.

Some men that are sterile present a history of extraordinary vigor in their sexual relations. They are, therefore, unable to understand and unwilling to admit that they are the cause of barren marriages. It is unjust and cruel to put a wife through any kind of a serious operation for sterility until the husband has been examined, and it has been demonstrated he is not the one responsible. Many a

woman has been cut and burned on account of barren marriages, when she was not the cause of it.

I shall include under sterility those several conditions, both organic and functional, which destroy the procreating power of the male.

Physiology of the Semen.—If we are to understand the nature of the various forms of sterility, we must first have a knowledge of the normal characteristics of the semen. While it is supposed that all physicians do understand this, it is well to refresh the memory in this connection.

While the semen is made up of various secretions, it is only necessary for us to understand that it is composed of two distinct elements, the fecundating and the non-fecundating.

The fecundating property is composed solely of the spermatozoa, the product of the testicles, which is collected and conducted to the common reservoir at the base of the bladder by the epididymis and the vas deferens. The peculiar form of spermatozoa is familiar to every student of medicine. It is composed of an oval head with a thread-like tail, which, by its wriggling movements, propels the spermatozoa across the field of the microscope with great rapidity when a specimen of the fresh semen is examined. The fecundating properties of the semen is dependent, to a degree, upon its activity, for when it ceases to be active it no longer has power of procreation. The life of the spermatozoa

may be preserved under favorable circumstances for forty-eight hours, and, it is claimed by Dr. Percy, they have remained active, when lodged in the female genital tract, for eight and one-half days. Water causes their tails to curl up in a loop. Weak alkaline solution stimulates their activity, while acid solutions destroy them.

The non-fecundating part of the semen is composed of secretions of the seminal vesicles, prostate, Cowper's glands, and the glands of the urethral mucous membrane. These latter lubricate the urethra for the passage of the semen, while the secretions of the others serve to dilute the spermatozoa, act as a vehicle for them, and also to preserve them. The spermatozoa have no motion, on account of the great density of the mass, until they are diluted by the secretions of the seminal ducts; and it is claimed that the ammonia magnesia phosphates contained in the prostatic secretions act as a preservative to the spermatozoa, preventing the acid or other secretions of the female generative tract from destroying them.

When the semen is ejaculated, it is an opalescent mass of varying consistency, and has an odor which is compared by Dr. Gross* to the raspings of fresh horn or bone. It coagulates on exposure, after which it becomes more fluid.

Classification.—There have been various classifications made of sterility. Some have been cumber-

* "Diseases of the Male Sexual Organs."

some, while others have been very meager. The cause of sterility is dependent upon such a variety of conditions so far removed from each other that they might easily be considered as separate diseases, were it not that the essential feature is the sterility, and it is generally this one condition or symptom that brings them to the physician. The old division into azoospermatism, absence of spermatozoa, or of living spermatozoa, in the semen; aspermatism, the total lack of semen; and mis-emission, which is the inability to deposit semen in the upper portion of the vagina, is a good general classification; but, as each one depends upon a variety of conditions, it is necessary for a proper understanding of the subject to sub-divide each. This sub-division will be given as each of the general divisions are taken up separately.

AZOOSPERMATISM.

As has been stated, azoospermatism is an absence of living spermatozoa in the semen. I shall divide azoospermatism into three classes: First, organic azoospermatism, which indicates that there is some organic change destroying the testicles, or producing some obstruction to the passage of the spermatozoa behind the ejaculatory ducts. Second, symptomatic azoospermatism, where the absence of spermatozoa is secondary to some disease of the

body; and, third, germinal azoospermatism, which is intended to indicate the condition where the semen has undergone changes within itself which have destroyed the spermatozoa.

Organic azoospermatism may be either acquired or congenital. Men born without testicles, bilateral anorchids, do not, of course, generate spermatozoa; but so little are the other organs developed in this case that the accessory secretions are also absent and no semen is ejaculated—in fact, he is totally impotent, as the penis is incapable of erection. The same is true of men who have lost their testicles early in boyhood, before the age of puberty. Congenital absence of the epididymis or vas deferens produces azoospermatism.

Cryptorchids, or when the testicles remain in the abdominal cavity, or are lodged in the spermatic canal, are generally sterile. It was formerly believed they were always sterile; but recent observers have reported cases where wives of cryptorchids have become pregnant. Authors, however, have looked upon these cases with considerable skepticism, believing the pregnancy might have occurred from other sources, inasmuch as the microscope was not used to detect the presence of spermatozoa in the semen of any of the supposed fathers.

Two cases have been reported where the testicles were lodged in the groin; spermatozoa were found in the ejaculated semen of one, and, in the other,

spermatozoa were found in the vas deferens. This would indicate that cases where the testicles had partly descended might be capable of generating and emitting spermatozoa.

In all cases of cryptorchids the semen should be examined with the microscope before the case should be pronounced sterile, or doubt thrown upon the source of the pregnancy of the wife of one.

Acquired Causes.—The most frequent of the acquired causes of organic azoospermatism is bilateral orchitis or epididymitis. They are generally the result of an extension of gonorrheal inflammation, or as the complication of mumps. I have recently examined a typical case of the latter.

CASE XI. A man had been married for twenty years, the marriage being barren. As the husband was most vigorous in sexual intercourse, instances of which he related seeming marvelous and which I have every reason to believe, and as he emitted semen with every ejaculation, it was thought the wife was sterile until a microscopical examination of the semen disclosed the fact that it contained no spermatozoa.

The patient gave a history that when a young man, the exact age he had forgotten, he had an attack of the mumps, and at the time both testicles were badly swollen; but this quickly subsided, and he had never noticed anything peculiar about the testicles or the sexual system since.

On examination the testicles were found to be very small and soft, but the epididymis of both sides were hard, giving the impression to the feel of a hard ridge, the size of a large pencil, down the side of the soft, doughy testicle. The line of separation between the two was easy to distinguish. It was plain that this man had suffered from bilateral epididymitis, which had been severe enough to obliterate its ducts, and thus prevent the passage of spermatozoa from the testicles to the seminal vesicles.

Gonorrheal inflammation may produce the same results, or it may cause occlusion of the vas deferens. Inflammatory conditions of the prostate may produce the same. Various diseases of the testicles cause azoospermatism. Inflammation disorganizes them to such an extent as to destroy their secreting properties. Syphilitic orchitis will destroy their properties, but they may return under proper treatment.

Degeneration of the testicles from any cause will, if progressive, sooner or later destroy their action. Tuberculosis of the testicles is sure to destroy their action, and, it is claimed by Goddard, when only one testicle is affected with tuberculosis, the property of both, so far as their power to generate spermatozoa is concerned, is destroyed; thus differing from other forms of disease of the testicles, where both have to be affected. This, however, is denied by many, who claim that the testicles are so closely

united by reflex ties, that when one becomes diseased the other is liable to cease to act, and thus produce azoospermatism.

Symptomatic Azoospermatism.—This is generally temporary, depending upon the duration of the disease which causes it, but it may be permanent. One of the most common causes of symptomatic azoospermatism is excessive indulgence in venery.

I have examined the semen from a young man who had sexual intercourse for four consecutive days. The first day the spermatozoa were abundant, showing vigorous movements; the second day they were very scanty, were smaller, and exhibited less motion; on the third day there was found only one deformed and motionless spermatozoid. Although several slides were examined on the fourth day, no spermatozoa were found.

There are instances on record where an examination for days, during sexual excesses, revealed no spermatozoa, while, after abstaining from intercourse for a few days, they were found in abundance. It would seem that, if simply emptying the seminal vesicles causes their disappearance, there would a few reappear in the course of a day or two, as when no intercourse is indulged in. It, therefore, appears that the overindulgence itself so affects the testicles by reflex action that it arrests their action.

The great variation found by Casper in the number and quality of the spermatozoa at different times

in the same person, and which has been corroborated by others, is, I believe, explained by the fact that organs so closely connected with the nervous system as the testicles are more profoundly affected by the mental and physical conditions of life than we have hitherto suspected.

In support of this assertion I would say that I have examined the semen of four persons, one of whom was a medical student, studying hard; one a lawyer, going through all the trials of that profession, and two were street-car drivers. Of the two former, there was the greatest variation from time to time, while with the stoical street car drivers, who had no strain upon their nervous systems, the amount and character of spermatozoa were quite uniform. I believe the fact that poor laboring people have more children than those wealthier and better educated, can be partially explained, at least, on this line.

The effect produced on the formation of spermatozoa by disease of the body differs greatly with age, being more profoundly marked in advanced age. Also, chronic affections decrease their formation more than acute diseases. It is to be noted that diseases of the central nervous system and of the urinary organs, particularly the brain and kidneys, have a much greater effect in retarding the formation of spermatozoa than disease of other organs of the body. Any disease which has a tendency to reduce the general system and lower its nervous

tone is liable to decrease or destroy the formation of spermatozoa, particularly in advanced age. All that class of diseases, such as neurasthenia, consumption, chronic diseases of the liver, and particularly diseases of the brain and kidneys, tend to produce azoospermatism. Old age itself has as one of its symptoms azoospermatism, as the spermatozoa decrease rapidly after the age of sixty years, even in well preserved, healthy men.

Sterility, due to absence or lack of development of spermatozoa, is a frequent accompaniment of spermatorrhea. Syphilis is sometimes the cause of sterility, even when the testicles are not apparently affected; but it is not so commonly the case as was once supposed. The continued daily use of large quantities of morphia has been known to produce azoospermatism. As the cases I have seen cited used eight or more grains hypodermically daily, there is but little danger from the temporary use of morphia in moderate doses.

Germinal Azoospermatism.—I have coined this term for the purpose of indicating those changes which take place within the semen, and which either destroy the spermatozoa entirely or change their quality to such a degree that they are no longer capable of fecundating an ovum.

Chief among this class is the colored semen which has been described as chromospermatism.* Red

* Prince A. Marrow, "System of Genito-Urinary Diseases."

or reddish-brown semen is due to the admixture of blood. The blood is due to congestion of some portion of the sexual system, and when the semen is reddish-brown the congestion has passed on to a state of inflammation, and some pus is mixed with the blood. Ultzmann* suggests that the location of the congestion may be determined by the character of the stain left by the colored semen. If the dry stains are irregular and have on the surface small specks of blood, it is from the *pars prostatica*, as he thinks this indicates the blood has not become thoroughly mixed with the semen, as is the case when it is from the seminal vesicles where the stains are evenly colored. The spermatozoa are not always absent in reddish semen, but are generally more or less changed. With the reddish-brown semen, indicating some pus, if spermatozoa are present, they are generally motionless.

Yellow or greenish-yellow semen has pus with it. This is the result of a greater state of inflammation, which may be located anywhere from the ejaculatory ducts to the epididymis. It is usually the result of a gonorrheal infiltration, but may be due to other causes, such as traumatism. If the admixture of pus is at all great, as is usual in this colored semen, spermatozoa are absent.

Blue semen, wine-colored semen, and grass-green semen have all been described, but their pathology

* "The Neuroses of the Male Genital and Urinary Tract."

is very uncertain. It is not known whether they are the result of some pathological change in the sexual system, or within the semen itself.

Great density of the semen, which prevents the normal movement of the spermatozoa, may cause sterility. Colored and watery semen produce azoospermatism.

Acute inflammation of the seminal vesicles (spermato-cystitis) does not properly belong to the subject under consideration, but, as the sub-acute or chronic forms are often the cause of sterility, it can properly be considered. This condition has never received the attention it should. I believe it is often the cause of sterility and spermatorrhea, and of many other reflex symptoms which are attributed to the rectum and prostatic urethra. I do not refer to those cases where serious symptoms are produced and abscesses are liable to form, for such a condition at once demands attention, but to the mild, chronic form that produces no appreciable symptoms, except occasionally when exacerbation occurs, made manifest by a fullness and bearing-down sensation in the rectum, and a soreness which lasts a few minutes after an ejaculation. Sometimes exacerbations are never manifest, but the finger in the rectum will discover a slight sensitiveness on pressure of these vesicles.

Diagnosis.—The diagnosis of the existence of azoospermatism is not difficult when the semen can

be obtained and placed under a microscope; but, as has been seen, so varied and complex are the causes which produce it, to get at an exact understanding of the primary condition is more difficult.

Where a man is capable of performing sexual congress normally, with an emission accompanying the orgasm, but, from the circumstances, is suspected of being sterile, caution should be exercised in approaching him on the subject. Nothing so touches a man's pride as to be thought incapable in this direction, and, when added to his capabilities in sexual intercourse, he is loath to believe there is anything wrong, and may refuse to submit to an examination; but, if the subject is placed before him rightly, he will see how it may be possible, and allow the physician to proceed.

First, the patient's general health should be carefully examined, to ascertain whether he is not suffering from some disease which is producing symptomatic sterility.

Second, his sexual relations, both past and present, should be considered, as well as his sexual hygiene. It may be that sexual excess is a cause of temporary sterility, as is frequently the case in amorous young married couples. Perhaps masturbation in youth has so stunted and weakened the sexual organs, that what would be normal to a man ordinarily vigorous constitutes excess in him.

Third: Has he ever had syphilis or gonorrhea? If so, to what extent? Did the gonorrhea extend back to the prostatic urethra, or into the seminal vesicles, and so into the vas deferens and epididymus? Has there been orchitis from any cause? An examination of the testicles would reveal if there is any induration or atrophy.

Examination of the Semen.—First, examination of the semen in bulk. If normal semen is allowed to stand in a test tube it will, in a few hours, separate into two layers—the upper one, composed of the *liquor seminus* and a few epithelium cells, will be translucent; the lower one will be thick, opaque, whitish in color, and contain the spermatozoa. These two layers will be of about equal thickness. If there are fewer spermatozoa than normal, this lower layer will not be of equal thickness with the one above. We can, therefore, judge somewhat, in the absence of the microscope, as to the amount of spermatozoa passed. It will also be found, if the semen is normal, that it will require a few hours for this sediment to form at the bottom, while, if there are no spermatozoa in the semen, it forms rapidly, as well as being very scanty.

To recapitulate, in an examination of the semen in bulk we may say, if the sediment is two to four hours in forming, and if it constitutes one-third or one-half of the whole amount of the semen, it is safe to suppose that it contains more or less sper-

matozoa, while, on the other hand, if the sediment is formed in from one-half an hour to an hour, and comprises but a small fraction of the whole, there is but little, if any, spermatozoa.

It is, however, to the microscope we must turn, if we wish to make an accurate diagnosis. Normal semen under the microscope exhibits a great mass of spermatozoa with the oval heads, as has been described, and tails at least ten times as long as the head. Every anomaly in form may be found, and, when marked, the man may be considered sterile. A large head with a short tail is supposed by some to indicate sub-acute spermato-cystitis. I have seen them in one case of severe irritable impotence accompanied with slight inflammation of the seminal vesicles. There was no history of gonorrhea, but one of exaggerated sexual excess. A very thin, thread-like head has been found in men suffering from general neurasthenia. In fresh semen the spermatozoa should exhibit a very lively motion, the head being propelled forward by the wriggling motion of the tail. Ultzmann * compares this liveliness to that of an ant's nest turned upside down with a stick, which gives an idea of the number of spermatozoa, as well as their agility. This power to propel itself should continue at least twelve hours, and even forty-eight hours under favorable circumstances. If they do not exhibit

* "The Neurosis of the Male Genital and Urinary Tract."

the motion they should, it may be they have in some way come in contact with an acrid discharge or acid urine, which retards their activity; or that the fluid is so dense that they are prevented from moving. In either case the addition of a weak alkaline solution will greatly increase their movements. If it should not, they may be considered to have but little vitality, and are probably not capable of fecundating an ovum.

Spermatic Crystals.—If semen is allowed to stand for a certain length of time, there is formed at first a few, and later a large number, of transparent, rhomboidal crystals, which, if not perfectly formed, the ends will be incomplete and rounded off. These crystals are formed from the accessory secretions, probably the prostatic, as they are found in azoospermatous semen. When the semen contains many healthy spermatozoa, they, by their continuous movements, keep the semen agitated, and crystallization cannot take place until after these movements cease. Therefore, in healthy semen, crystallization does not occur until the second or third day; but in azoospermatous semen they may form within a half hour, and, when the spermatozoa are feeble, within a few hours. The length of time which occurs before crystallization takes place, therefore, gives us a clew to the vitality of the spermatozoa it contains.

Colloid semen seems to be an exception to the

above, as it contains neither spermatozoa nor spermatic crystals: but contains an abundance of epithelium, which undergoes colloid degeneration.

Prognosis.—The prognosis of azoospermatism depends upon the pathological conditions present. Where there is a loss of the testicles, or there is any disease in the form of tumor, cancer, or tuberculosis affecting them, or past inflammation which has caused their destruction, the prognosis is bad.

When the sterility is due to syphilis, it is liable to disappear under proper anti-syphilitic treatment. If orchitis or epididymitis has produced the azoospermatism and has been slight, so that no destruction of tissue has taken place and the induration is but little, if the case comes under proper treatment soon after, before the induration has become organized, the prognosis is favorable, and more favorable if the orchitis or epididymitis was the result of traumatism or other causes than gonorrhea.

In those cases where the azoospermatism is due to the lack of development of the genitals and when caused by masturbation, under proper regimen and hygiene they may develop sufficiently to produce zoosperms.

When azoospermatism is due to complete occlusion of the vas deferens it is hopeless, for there is no treatment which can reach the seat of the trouble, but is more favorable when occlusion is only partial.

The prognosis of symptomatic azoospermatism depends upon the curability of the primary disease. If it depends upon nervous prostration, proper treatment will generally restore the patient, and with the recovery zoosperms will be formed; but if due to tuberculosis of the lungs or to incurable Bright's disease, the prognosis is bad, and it is a wise provision that it is.

The most favorable prognosis of azoospermatism is when it is the result of excesses, either of sexual excesses or masturbation after puberty, for here the observation of proper hygienic rules will generally produce a cure.

In those cases where the semen is so thick that it retards the movements of the spermatozoa, or when the semen is watery or colloid, nothing can be done to relieve the existing condition. In the former cases, however, pregnancy has taken place where a weak alkaline solution was injected into the vagina just after intercourse, thus diluting the semen. When the cause of the colored semen is due to inflammation of the seminal vesicles or prostate, the prognosis is better, as treatment can be directed to the relief of this inflammation. When atrophy of the testicles is the result of excess and is not too pronounced, treatment will do much to restore them; but when due to cerebro-spinal lesions, nothing can be done.

Treatment.—In cryptorchids, if the testicles have descended to the groins, slight traction daily may

finally bring them into the scrotum. If a case is taken early, when the mobility of the testicles is great and the descent is accomplished before the age of puberty, there will probably be no trouble from sterility; but, when the descent is after puberty, the result is more doubtful.

When azoospermatism is due to orchitis and epididymitis the result will depend upon the severity, the skill with which the acute attack has been managed, and the length of time which has elapsed after the acute attack before treatment is instituted. As soon as the inflammation has subsided and left more or less induration, absorbents should be administered—such as kali hydriodicum. The patient's general health should be looked after and his system well nourished; the testicles should be treated locally by galvanism to absorb the deposits.

In those cases where there is atrophy of the testicles from overindulgence, proper hygiene, as given later, should be attended to, and the testicles strengthened by local applications of iodine and galvanism.

There is one other condition in which local treatment by faradism is indicated, and that is when the vas deferentia are partially occluded. The faradic current is employed to stimulate the testicles to a more active secretion, and thus cause more pressure on the obstruction and dilatation of the canal.

Application of Electricity to the Testes.—It is not an easy matter to administer electricity to the testicles in sufficient quantity to be of use. There are two methods, however, which I have employed, and which have given satisfaction.

One is to cover the testicles with a layer of absorbent cotton which has been saturated with a solution of salt water, so that all parts of it conduct

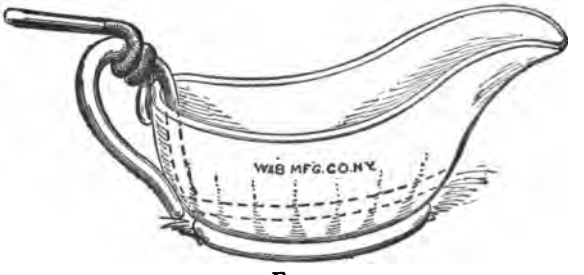

FIG. 7.

readily. This is covered with a thin layer of lead, which is wrapped around it and has a rheophore connection.

The other method is to take an ordinary oblong gravy-dish—one of common earthenware is best, as the plainness of its outlines makes it more convenient than the fancy shape of the expensive ones. A copper plate connected with a wire, the other end of which has a rheophore attaehment, is placed in

the bottom of the dish and covered with a sheet of rubber or asbestos, so as to prevent the testicles from coming in direct contact with it (Fig. 7). The wire may be wound round the handle of the dish, which serves to hold the copper plate in position. This dish is partially filled with a saline solution. With the patient standing, his body bent forward, his elbows resting on a table, so as to cause the testicles to swing a little forward, the dish is pressed up around them so that the solution comes well up above the testicles.

Of the two, the latter will generally be found to be the most satisfactory; but there will be cases when the former can be better used.

In those cases where simple stimulation of the testicles is indicated, the faradic current will be most useful; but, in cases of atrophy, the galvanic is superior, although an occasional treatment with the faradic may be given with benefit. Where absorption of a deposit is desired, the galvanic should always be chosen.

In administering electricity to the testicles, place the positive pole on the lumbar region and the negative over the testicles. The duration of the treatment should be from three to eight minutes, and may be given daily or every other day. The strength of the faradic current should be gauged by the feelings of the patient, but should never be very strong—not so strong as to produce any disagree-

able sensations either during or after the treatment. From three to ten milliampères of galvanism may be given. It should never be crowded so as to produce a sickish feeling, which will occur when it is given too strong.

This treatment, both for atrophy and induration of the testicles, should be continued for a long time—at least for three or four months if recovery does not set in before.

In those abnormal conditions of the semen due to a slight chronic inflammation of the seminal vesicles, all sexual intercourse should be prohibited while there are any disagreeable sensations, either in the rectum or otherwise, following the congress. After the inflammation has subsided to such a degree that nothing is noticed following the ejaculation, well-regulated coitus, if the patient is married, at intervals not shorter than a week, may be permitted. The patient should take a hot sitz bath at night before going to bed. If the fæces are at all hard, a pint of hot water should be thrown into the rectum before stool, and retained as long as it can be with comfort. The patient should avoid horseback exercise and bicycle riding; above all, avoid abnormal sexual excitement of any kind. The general health should be well nourished and the patient put under good hygienic conditions.

All those cases of temporary sterility due to sexual excesses need is perfect rest from sexual

congress, and to be put under a hygienic and general management such as is recommended under the treatment of impotence, and the recovery will generally be easily and speedily accomplished.

There are few local symptoms which can be utilized in making a homeopathic prescription. There may be some indications in azoospermatism which call for a remedy, and there is sure to be in symptomatic azoospermatism; but they will be of a general character and not local. All the general knowledge of the materia medica will have to be utilized in those cases of germinal azoospermatism where the semen is changed in character. We have some remedies that have symptoms indicating a change in semen, and which may furnish a guide to the selection; but general indications, as well as the local ones, should be consulted in making the prescription.

SPECIAL THERAPEUTICS.

Agnus cas.—Semen watery and deficient.

Cantharis.—Discharge of blood in the place of semen.

Lachesis.—Semen has a pungent smell.

Ledum.—Nightly emissions; bloody.

Sarsaparilla.—Bloody pollutions.

Selenium.—Semen thin, without normal odor.

Sepia.—Weak and watery pollutions.

Stramonium.—Has smell.

Thuya.—Discharges of prostatic fluid in threads, early morning.

For fuller particulars regarding the local symptoms of the sexual organs, consult the special therapeutics of spermatorrhea and impotence.

ASPERMATISM.

All non-emissions may be divided into three classes: Organic aspermatism, when some organic disease exists as the cause of non-emissions; neurotic aspermatism, a term I have originated to indicate that class of non-emissions depending upon a disordered nervous system, and which is described by other authors as atonic, neurasthenic, etc.; and, third, psychical aspermatism, which term explains itself.

Organic Aspermatism.—Seminal fistula, the result of wounds and abscesses of the prostate or sub-rectal tissue, or from surgical operations, in which the semen, instead of being expelled through the ejaculatory ducts, is forced through the fistula, either into the bladder or rectum, and is passed with the next evacuation of the bowels or passage of urine.

Obstruction, Absence, or Division of the Ejaculatory Ducts.—There have been dissections made where there was a congenital absence of the ejaculatory ducts. There have, also, been cases where by

a deviation of the ejaculatory ducts the semen was carried back into the bladder, which have evidently been congenital. These are rare instances, but acquired obstruction or deviations of these ducts are of more common occurrence.

I have seen one case of the latter due to abscess of the prostate, brought on by the use of a sound for urinary obstruction, probably due to spasm. A London surgeon, for it occurred in England, opened the abscess through the perineum. Two days after a second abscess, which was smaller and had escaped the notice of the surgeon, broke, evidently into the deep urethra, for a little pus escaped from the meatus at the time, but a larger quantity was passed with the next voiding of urine. Occasionally, following sexual congress, there would a few drops of whitish fluid appear at the meatus, which, on examination, was found to be semen. This was of rare occurrence, but the urine voided immediately after coition was always found to be full of spermatozoa. One or the other of these abscesses, probably the one which broke into the urethra, so changed the ejaculatory ducts that the semen was sent backward instead of forward.

The most frequent form of organic aspermatism is obstruction or obliteration of the ejaculatory ducts. Surgical operations for the removal of stone in the bladder have been known to divide both ejaculatory ducts. Calcareous and magnesium deposits

mixed with spermatozoa have been found in the ducts so as to completely obstruct their passage; or they may form in one and become so large that, by pressure, they obstruct both.

Obstructions due to infiltration, a result of deep urethral inflammation of gonorrheal origin, which extends to the ducts, are the most common cause. One case of this kind which came under my care, and which I was able to cure, is very interesting.

CASE XII. A married man had an attack of gonorrhea in which the deep urethra was much involved. After the attack had been cured he undertook sexual congress with his wife. All went well until the orgasm was reached, when he was seized with a terrible pain in the perineum and rectum, which continued for nearly a half hour, and at first was so severe that it caused him to scream. There was no ejaculation of semen. On introducing my finger into the rectum I found the seminal vesicles much larger than normal and sensitive to the touch. Placing a glass tumbler over the penis, I undertook to press the contents of the vesicles out, but failed the first two times; at the third a little stringy fluid escaped the meatus and lodged in the tumbler. The fourth time brought away a quantity of semen. He was then advised to have sexual congress twice a week, which was performed without unnatural symptoms. The case completely recovered.

Strictures of the urethra may be the cause of aspermatism by obstructing the flow of semen. A stricture which will readily admit the passage of urine may, through the circulatory changes during erection, become so closed that the denser fluid will not pass, but is forced back into the bladder, to be expelled with the next passage of urine.

There have been cases reported in which a tight foreskin has prevented the escape of the semen. This seems quite impossible, as an opening which will admit the passage of urine when the penis is flaccid will certainly admit the flow of semen when the penis is erect and pressing against the opening, thus dilating it.

Neurotic Aspermatism.—Sexual congress depends upon the co-ordination of different nerve centers. The friction of the penis against the walls of the vagina constitutes the first act of the series. The nerves conduct certain impressions to their centers in the lumbar cord, which, by reflex action upon other nerve centers, produce the pleasurable sensations and induce the motor impulses governing the seminal vesicles and ducts, thus producing an ejaculation. Now, if any part of this nerve cycle is so disarranged that it does not perform the task involved upon it, the sexual act will not be complete.

First, it may be due to anæsthesia of the nerves supplying the penis, and they fail to conduct im-

pressions to the centers. In such a case the penis will be anæsthetic to the touch. No sensation, or a slight sensation, will be felt when the penis enters the vagina, and no matter how long the act is continued, it does not improve. This anæsthesia, while generally functional, may be organic; such as the loss of the prepuce, or the surface of the penis being covered with scar tissue as the result of chancres, or an accident by scalding.

Second, it may be due to destruction of the reflex centers. There have been cases reported where it was supposed that the absence of this center was congenital, but the cause is undoubtedly acquired in most cases. In such a case there is no anæsthesia of the penis. The person feels the pressure of the penis against the wall of the vagina as in perfect health, and, if he continues the act long, he may be forced to discontinue on account of the extreme sensitiveness of the glans caused by the long continuance of the friction.

Third, when the motor cells are the seat of the trouble, the act will go on in a normal manner, accompanied by pleasurable sensations, but with a feeling of spasms in the region of the seminal vesicles, usually referred to the rectum by the patient, and no semen escapes, or, if any does, only a few drops. Sometimes more semen escapes after the penis is withdrawn. This, I believe, is due to the fact that the contractions are not rhythmical

and uniform, but spasmodic, and after the spasm has subsided some semen escapes.

This particular form of aspermatism is easily distinguished from obstruction of the ducts by the fact that the patient will generally suffer more or less from night emissions, as will be seen later on, in which semen flows freely, and, also, semen can be pressed from the ducts and vesicles by the finger in the rectum, as in Case XII.

I have had the fortune to witness a number of the cases which I have described under neurotic aspermatism, not that they are so common, but the apparent nervous condition has brought them to me for electrical treatment.

The three subjoined cases will serve to illustrate the three different types:

CASE XIII. A man, age thirty-seven, married, the father of two children, consulted me on account of aspermatism. He had masturbated some, but not to excess, from his twelfth to his eighteenth year. Had married in his twenty-fourth year, and had indulged excessively in sexual congress, and had practiced the so-called sexual continence, described on page 99. At first he noticed that if he prolonged the sexual act unduly he was unable to complete it with an emission; but, if he did not, there was no trouble. He gradually grew worse, so that he was unable to complete the act with an emission at any time, no matter how hard he tried. The penis was so anæs-

thetic that pricking it with a pin was scarcely felt, and, in having intercourse, he was unable to tell whether the penis was in the vagina or not, so benumbed was it. This man was not impotent, but his erections were far less frequent and vigorous than formerly. The urethra was slightly sensitive.

CASE XIV. A man, twenty-seven years of age, had masturbated but little in youth, but had begun illicit intercourse at the age of seventeen, which had been continued up to the time I saw him. He had had several attacks of gonorrhea. Two strictures were found, one one inch and the other five inches from the meatus, measuring twenty-one and nineteen respectively, French scale. The whole urethra was very sensitive, the prostatic portion excessively so. There was no anæsthesia of the penis, but he was unable to have an emission, no matter how long he continued the sexual act.

CASE XV. A man, aged forty-one, an actor, had masturbated some during his youth, but had indulged in promiscuous illicit intercourse to excess. He admitted he had allowed a young man in his company to perform abnormal practices upon him for one year, when he found himself a total wreck physically, and stopped the practice. The man was a pronounced neurasthenic, with excessive sensitiveness over the lumbar region. When attempting sexual congress it would end in a very faint

pleasurable sensation, accompanied by a disagreeable sensation in the perineum and rectum, which would subside in from five to ten minutes, but with no emission. Sometimes, however, a little semen would pass away after withdrawal. The man had never had gonorrhea,—which was due to good luck instead of virtue,—and no stricture, but the deep urethra was very sensitive.

These patients will always be more or less neurasthenic, and all suffer from melancholia and depression. The deep urethra will, as a rule, be sensitive, and often perineal and rectal spasms will be marked. These cases of neurotic aspermatism, while not having an emission during coition, will have relief by nocturnal emissions, which are accompanied by pleasurable sensations, showing that, while the nerve cycle does not work in uniformity, they are capable of rhythmical impulses during the sleeping hours. Every case I have seen has presented the history of sexual excess or abnormal practices. These have produced a weakness of the cells in the lumbar cord, which breaks the cycle of reflex action, and aspermatism is the result.

As I have already given the pathology of this condition at length under spermatorrhea and impotence, it is useless to dwell on it here.

Psychical Aspermatism.—Psychical aspermatism is generally of a relative type. One may be capable of completing sexual congress with one woman and

not with another. A man may, from suspicion of infidelity or from disgust, be unable to complete sexual congress with his wife, while he is not troubled with other women. On the other hand, as is usually the case, a man, from fear of catching disease, or from disgust with the vulgarity or indecency of a prostitute, is unable to complete the act by an emission. It often occurs in young men, during their first attempt at illicit intercourse, that, after beginning the act, they are stricken with remorse, which has a very depressing effect on them, and they become disgusted and are unable to complete the congress by an orgasm.

The following case will illustrate how it is possible for a sensitive young man to become disgusted with a prostitute, which had such an effect on him as to cause psychical aspermatism:

CASE XVI.—A young man, æt. twenty-one, met a prostitute at one of the old casinos at High Bridge and went home with her. He began the sexual congress without difficulty, but, owing to a very vulgar remark made by his partner, he became so disgusted that he was unable to complete it with an ejaculation.

Custom, also, has a great bearing upon psychical aspermatism, as the following case will illustrate:

CASE XVII.—A married man, forty-seven years of age, who had always been sexually vigorous, had carried on the practice of withdrawing just before

an emission to prevent impregnating his wife. When he consulted me he was showing signs of irritable impotence, which had been creeping on him for nearly a year. I at once diagnosed the cause of the impotence as due to his unnatural cohabiting, and informed him he would have to discontinue it. He then told me that, inasmuch as his wife had gone through the change of life some three years previous, there had been no necessity for his continuing the practice, and he had undertaken to stop it; but he found, so long as his mind was on his having normal congress, it was impossible to have an emission, though he was able to complete the congress whenever he followed his accustomed rule.

The ætiology of aspermatism depends entirely upon the history of the case, and it is, therefore, impossible to give more on these points than has already been done in the foregoing description.

Prognosis.—In cases of organic aspermatism, with two exceptions, no treatment that I am aware of is of avail. The two exceptions are:

First, when stricture of the urethra forms an obstruction to the flow of semen. Here, of course, proper treatment will remedy the trouble; and,

Second, when the ducts are occluded by deposits, and if of not too long standing, being the result of inflammation of recent date, it may be possible to overcome the obstruction.

In neurotic aspermatism the prognosis depends upon the age of the patient, the amount of excess and abnormal practices indulged in, and the general condition of the patient. While the prognosis should always be guarded, it may be stated it is, as a rule, good under proper hygienic measures and active treatment.

Psychical aspermatism, like all psychical diseases, is curable, providing the right influences can be brought to bear and the patient surrounded by the right hygienic conditions.

Treatment.—In those cases where obstruction of the ejaculatory ducts is not due to complete obliteration, but to a stoppage of the passage, and has not been of too long standing, treatment by compression of the ducts, as given in Case XII., should always be attempted. If the obstruction is quite solid, it can be more easily overcome by introducing a steel sound into the urethra, which furnishes some resistance to press against. Several attempts should be made before the case is abandoned.

Where there has been an inflammation of the prostate and the parts have not returned to their normal condition, and the prostate and tissue surrounding it have a hard, unyielding feel, showing a plastic deposit, good results may be expected to follow, if taken soon after the attack has subsided, by the passage of galvanism through the induration by means of the negative electrode in the rectum,

and the other on the perineum. The rectal electrode given in Fig. 5 is preferable. Treatment may be given every other day and persisted in for weeks.

When the obstruction is due to stricture of the urethra, it hardly needs to be stated that it should be removed by proper treatment, either by division, dilatation, or electrolysis.

It is in those cases of neurotic aspermatism that treatment gives the best results, and in which it should be constantly and thoroughly carried out. The first precept in the hygienic and general management in treating neurotic aspermatism, as in all functional disorders, is perfect abstinence from all sexual intercourse, masturbation, or toying with women—in fact, the parts should have as perfect rest as it is possible to give them, and nothing indulged in that in any way exhausts them. The exercise of the patient should be regulated as best suits his condition, and his habits carefully looked after. In fact, the hygiene and management of irritable impotence given on page 107 is not too strict for a case of neurotic aspermatism.

If the patient is neurasthenic, which is frequently the case, the diet should be generous. Rest, massage, general faradization, and static electricity should be administered. To overcome the neurasthenia should be one of the first and most persistent points of all the treatment, for it will be impossible to relieve the

case satisfactorily until the general health is built up. The mental condition should always be taken into consideration, and moderate assurance, with the active treatment, will help much to improve the state of the mental depression.

In those cases of psychical aspermatism where it is relative only in regard to illicit intercourse, noth ing is to be done on the part of the physician. He is only to give good advice and urge sexual hygiene upon his patient. It is not part of a physician's duty to prepare a man for unlimited illicit intercourse. When, however, the psychical aspermatism is only present with the wife, the physician may do much to relieve it. If it is lack of passion in the wife, or the sense of the marriage relation is misunderstood by the husband, advice, perhaps to both, may be of use. But where infelicity on the part of the wife, or a changed state of affection is the cause, the physician is not called upon to mix up with the family quarrel. As the case recovers, sexual intercourse may be indulged in at infrequent intervals; but it should not be allowed at all until the case has reached that point where other symptoms of aspermatism, if there have been any, have disappeared. The patient should be warned against excesses or resuming abnormal practices, if he has been guilty of them. Active treatment should be begun at once. Circumcision should be performed, if necessary. The urethra should next be examined, and, if a

stricture is present, it should receive proper treatment. The same is true of any diseased patches of the urethral membrane. Deep urethral sensitiveness, if present, should be subdued by the passage of a steel sound combined with galvanism, as recommended on page 43.

If the hyperæsthesia and-irritation of the organs are at all marked, the hot sitz bath should be used until they disappear, and then cold bathing, as recommended in spermatorrhea, pages 32 and 33. Massage should be vigorously carried out.

The electrical treatment is most important in neurotic aspermatism, in all its forms. At first a descending current of ten milliampères should be given along the spine for three minutes, then the positive electrode should be removed to the perineum and under surface of the scrotum, and the negative given, both labile and stabile, over the lumbar spine for as many more minutes, using about the same strength of current. In addition to this treatment the faradic brush, as recommended on page 119, should be given over the penis for three minutes, when anæsthetic aspermatism exists. In those cases due to a lack of proper coördination or working of the motor cells, a steel sound should be introduced and the faradic current applied as given on page 120. The electrical treatment should not be given so long as there is any deep urethral inflammation remaining, or that organ is particularly irritable.

Treatment may be given daily, and in some cases should be given so; but, in mild cases, every other day will suffice. I have seen cases recover after one week's treatment; but, if necessary, it should be persisted in for at least two or three months, before the case is pronounced hopeless.

About the only condition where homeopathic medication can be of avail is found in the neurotic type; there are few local indications for a remedy, and it would be useless to prescribe entirely on them if there were. The remedy should be prescribed on the general indications. The whole materia medica is the only book that will cover a field broad enough for prescriptions.

MISEMISSION.

Under misemission is included that class of diseases where a normal coition is followed by an emission, but, from some deformity which produces a malposition of the meatus, prevents the semen from lodging in the upper part of the vagina, and greatly diminishes the chances of impregnation. Of these deformities the various forms of epispadias and hypospadias are the most common.

The late Dr. S. P. Burdick attended a woman through a miscarriage whose husband had an hypospadias. The genital organs were all undersized, the penis measuring less than five inches when

erect, and the opening of the urethra was midway between the scrotum and the meatus. The wife's character had never been subject to reproach, and Dr. Burdick believed thoroughly in her chastity.

In those cases where the urethral opening is at the peno-scrotal junction or the junction of the penis with the pubes, as in the case I saw with Dr. S. F. Wilcox, leaving simply a groove along the upper surface of the penis, there is less liability of impregnation. However, these cases cannot be adjudged sterile, for there are cases reported, both in living women and in subjects of the dissecting room, where impregnation has occurred and the hymen remaining unimpaired, showing that semen deposited in the vulva may impregnate an ovum.

The deformity producing misemission is so apparent on examination that it needs no description here. The only remedy there is for it is found in plastic surgery, which is sometimes successful, if the opening of the meatus is near the end of the penis.

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